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WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE
and
OREGON STATE UNIVERSITY
and
STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above
in cooperation with other Federal, State and private organizations.

||||||| AS OF |||||
JAN. 1, 1963

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 4170, Portland 8, Oregon.

PUBLISHED BY SOIL CONSERVATION SERVICE

<u>REPORTS</u>	<u>ISSUED</u>	<u>LOCATION</u>	<u>COOPERATING WITH</u>
RIVER BASINS			
WESTERN UNITED STATES	MONTHLY (FEB.-MAY)	PORTLAND, OREGON	ALL COOPERATORS
STATES			
ALASKA	MONTHLY (MAR.-MAY)	PALMER, ALASKA	ALASKA S.C.O.
ARIZONA	SEMI-MONTHLY (JAN. 15 - APR. 1)	PHOENIX, ARIZONA	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO	MONTHLY (FEB.-MAY)	FORT COLLINS, COLORADO	COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO	MONTHLY (JAN.-JUNE)	BOISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
MONTANA	MONTHLY (JAN.-JUNE)	BOZEMAN, MONTANA	MONT. AGR. EXP. STATION
NEVADA	MONTHLY (JAN.-MAY)	RENO, NEVADA	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
OREGON	MONTHLY (JAN.-JUNE)	PORTLAND, OREGON	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH	MONTHLY (JAN.-JUNE)	SALT LAKE CITY, UTAH	UTAH STATE ENGINEER
WASHINGTON	MONTHLY (FEB.-JUNE)	SPOKANE, WASHINGTON	WN. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEB.-JUNE)	CASPER, WYOMING	WYOMING STATE ENGINEER

PUBLISHED BY OTHER AGENCIES

<u>REPORTS</u>	<u>ISSUED</u>	<u>AGENCY</u>
BRITISH COLUMBIA	MONTHLY (FEB.-JUNE)	WATER RIGHTS BR., DEPT. OF LANDS, FORESTS AND NATURAL RESOURCES, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA	MONTHLY (FEB.-MAY)	CALIF. DEPT. OF WATER RESOURCES, P.O. BOX 388, SACRAMENTO, CALIF.

WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

ISSUED
JANUARY 8, 1963

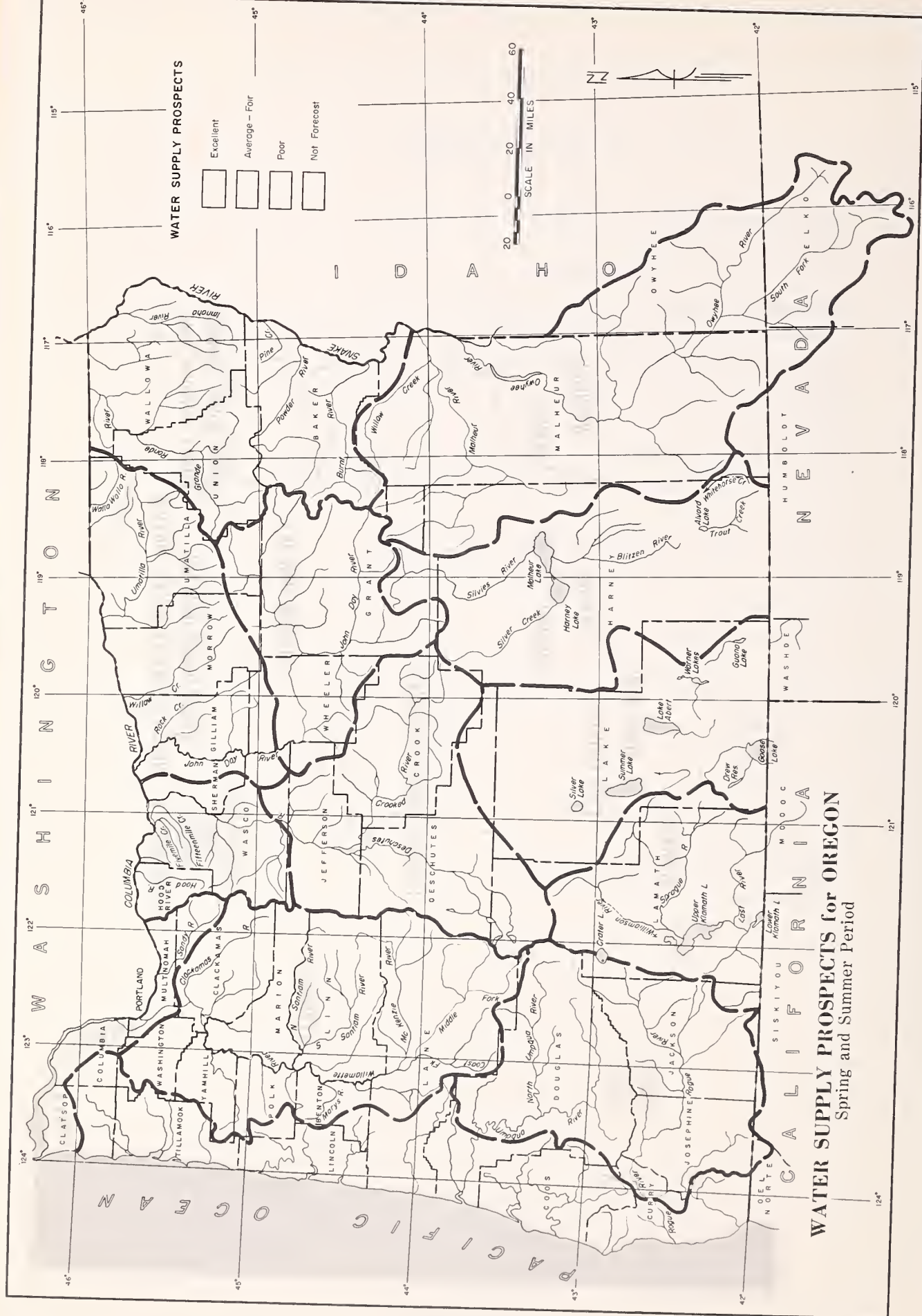
Report prepared by
W. T. FROST, Snow Survey Supervisor
and
BOB L. WHALEY, Assistant Snow Survey Supervisor
SOIL CONSERVATION SERVICE
209 S.W. 5TH AVE., PORTLAND 4, OREGON

Issued by

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STATE CONSERVATIONIST	DIRECTOR	STATE ENGINEER
SOIL CONSERVATION SERVICE	OREGON AGRICULTURAL	STATE OF OREGON
	EXPERIMENT STATION	

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WATER SUPPLY OUTLOOK for OREGON

JANUARY 1, 1963

The early winter outlook for Oregon's 1963 irrigation water supplies is fair. Snow cover in measurable amounts, is found only at high elevations and surveys there range from 0 to 33 percent of the usual January 1 snow water amounts. Reservoir storage is much better than last year at this time and coupled with good soil moisture conditions over most of the state, is likely to be the safety factor needed to offset a low snow year. Fortunately, there are still two or three months remaining to improve this low snow pack.

SNOW COVER

Surveys on key snow courses in Oregon indicate this year's "snow crop" is close to record low at the beginning of the year. Water content of the snow pack varies from practically nothing in the Lake county vicinity up to one-third normal in northeastern Oregon and in the Klamath Basin. Other areas of the state have less than one-third the usual January 1 snow cover.

SOIL MOISTURE

Heavy fall rains and some melting of early snow have satisfactorily recharged the soils in upper watershed areas. These well-primed soils will favorably affect runoff from the melting snow next spring.

RESERVOIR STORAGE

Water stored in 23 major reservoirs in the state is 83 percent of the 15 year average (1943-57), but is 145 percent of last years' amount on January 1.

Stored water supplies are the poorest in Malheur and Lake counties and in the Lost River area of Klamath county. However, these areas have considerably more stored water than last year on January 1.

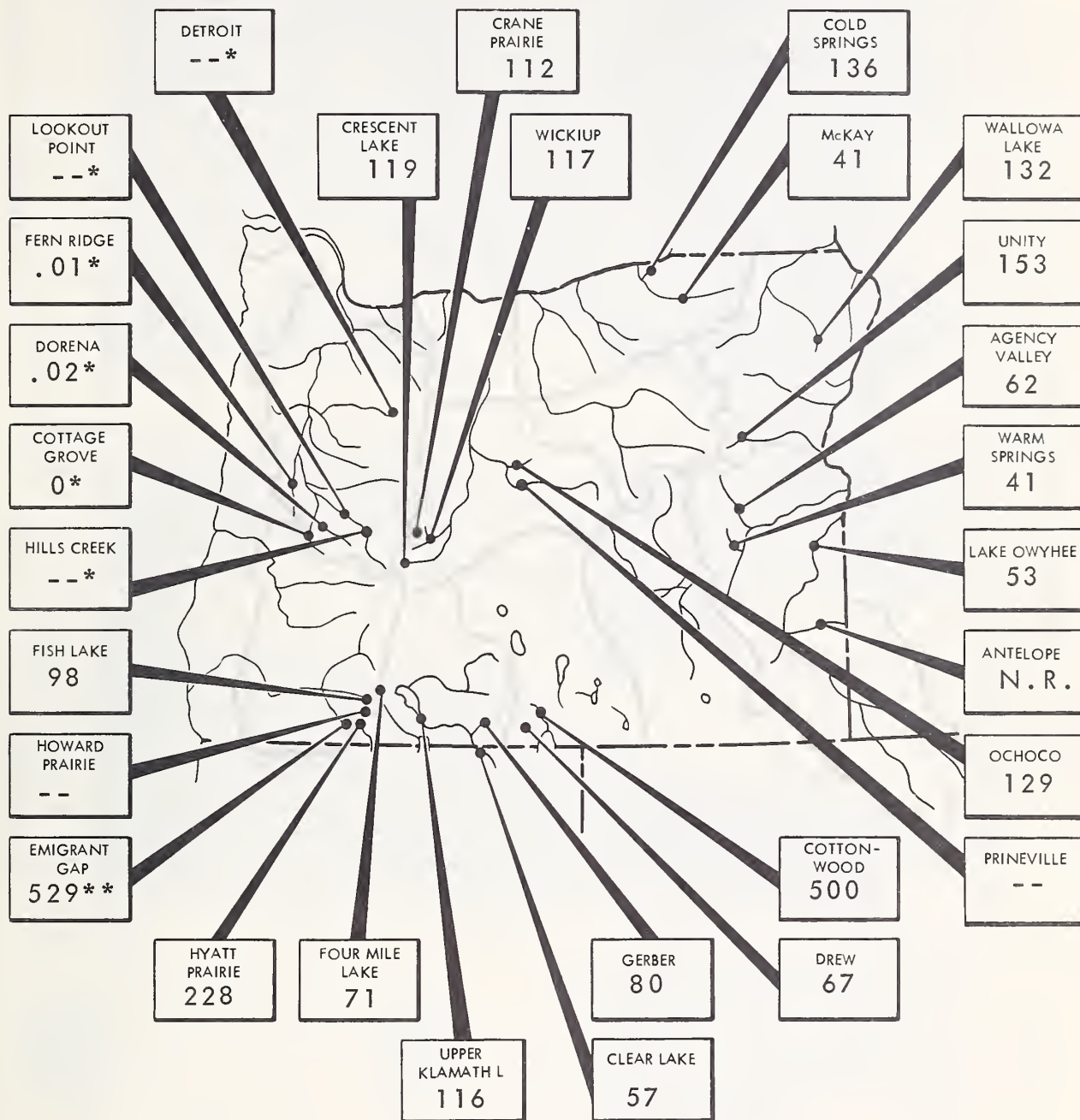
STREAMFLOW

Flow of major streams in the state has been close to normal since October 1, except for a wide belt running through the state from northeast to southwest in which flows have been much above the expected amounts.

Although stored water supplies and soil moisture conditions are favorable for next season's irrigation operations, temperatures nearer normal will be needed for the balance of the winter to permit snow rather than rain to fall and accumulate on the upper watersheds.

STORAGE STATUS of OREGON RESERVOIRS as percent of 1943-57, 15 year average

JANUARY 1, 1963



*- Multiple purpose reservoir - space reserved primarily for flood runoff.

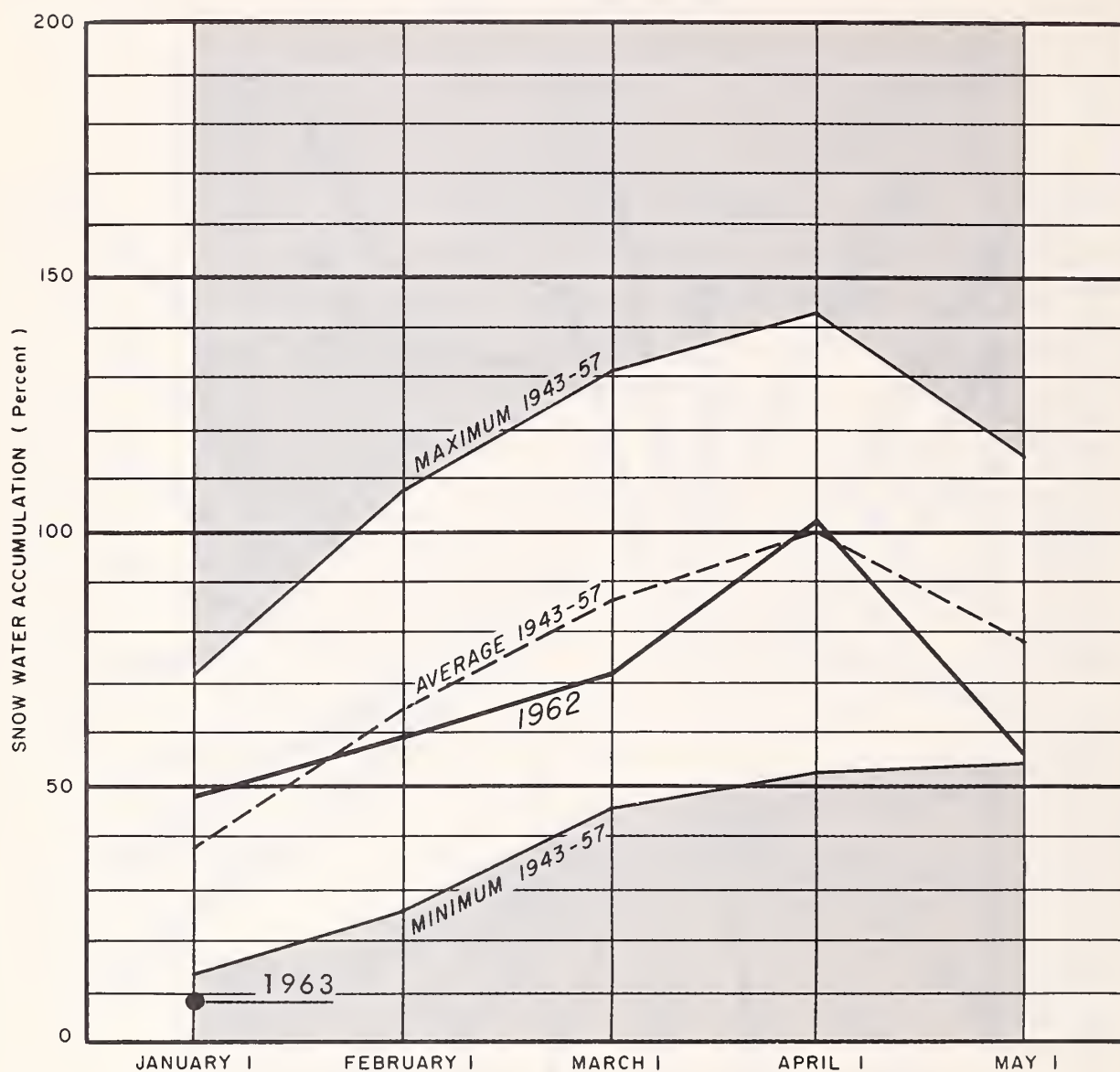
N.R. - No report.

** - Capacity of reservoir greatly increased but current storage compared with previous average.

-- Short record - no average for comparison.

SNOW WATER ACCUMULATION in OREGON

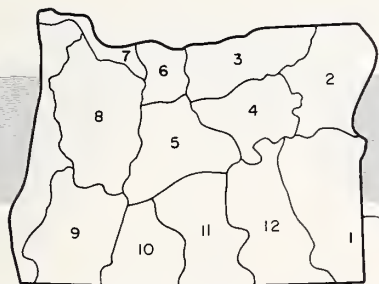
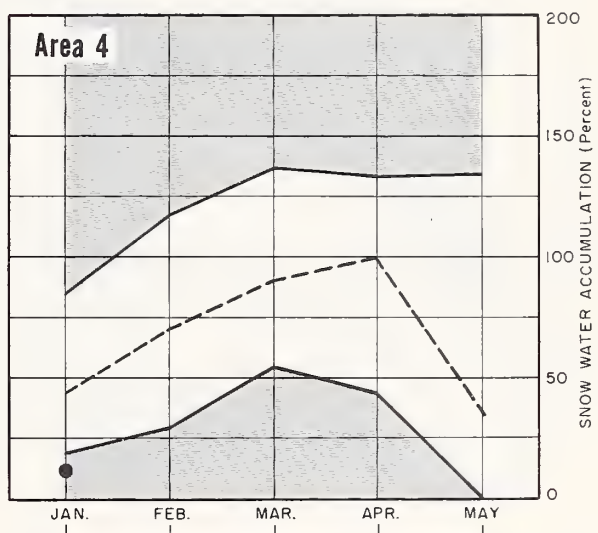
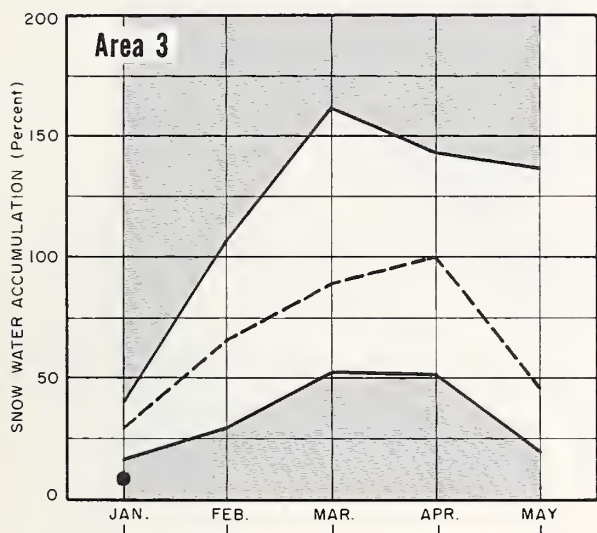
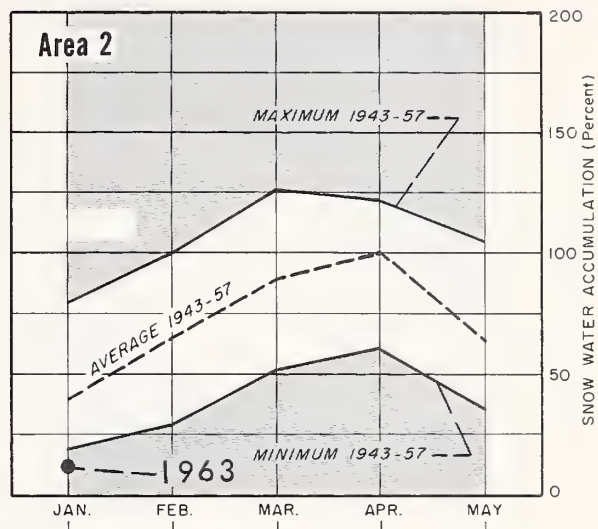
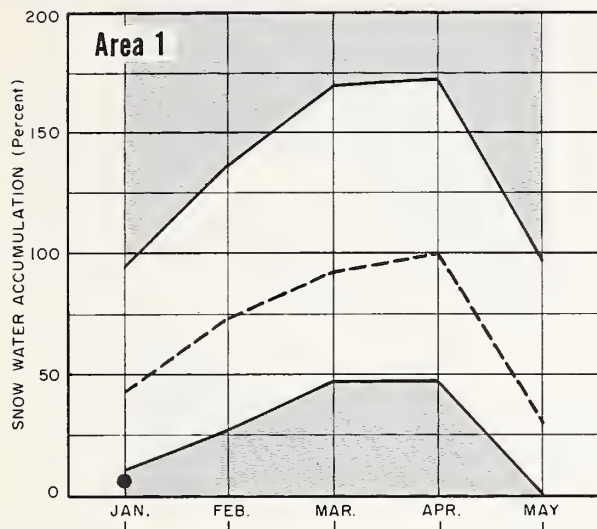
JANUARY 1, 1963



SNOW WATER ACCUMULATION in OREGON

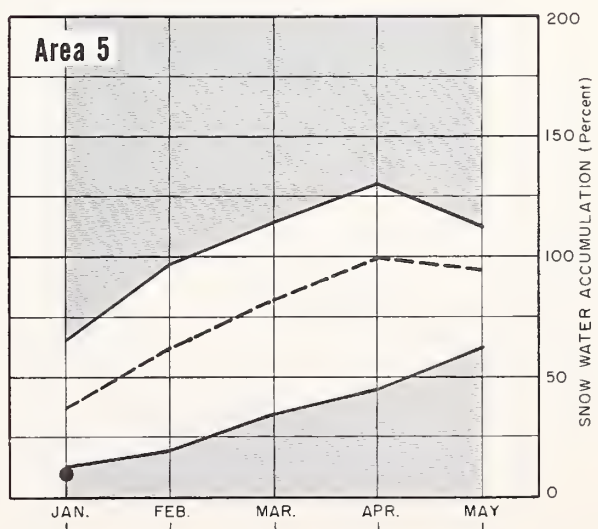
(Percent of average maximum accumulation)

JANUARY 1, 1963



WATERSHED AREA LOCATIONS

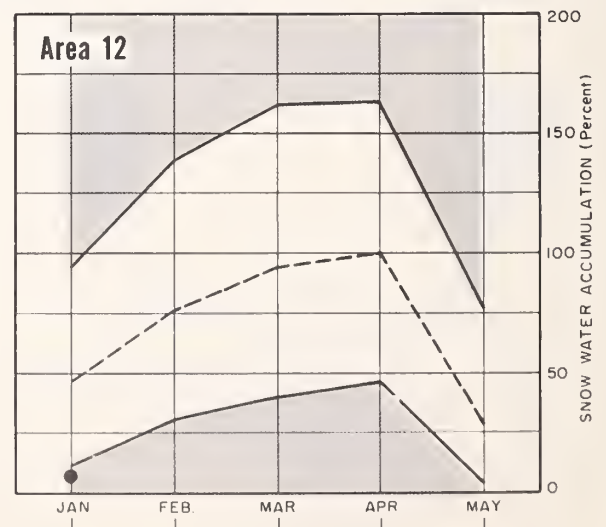
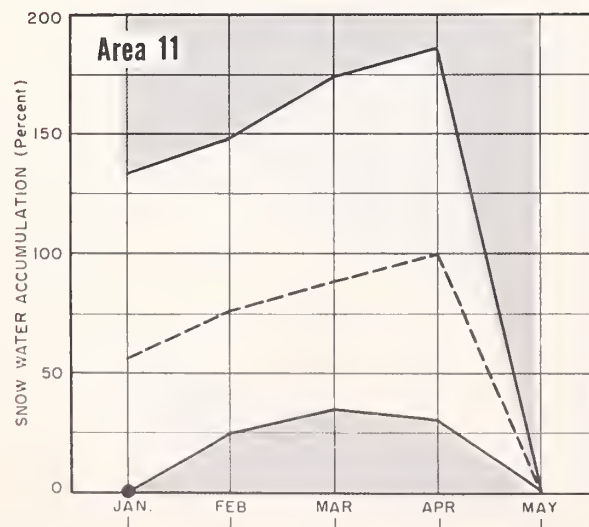
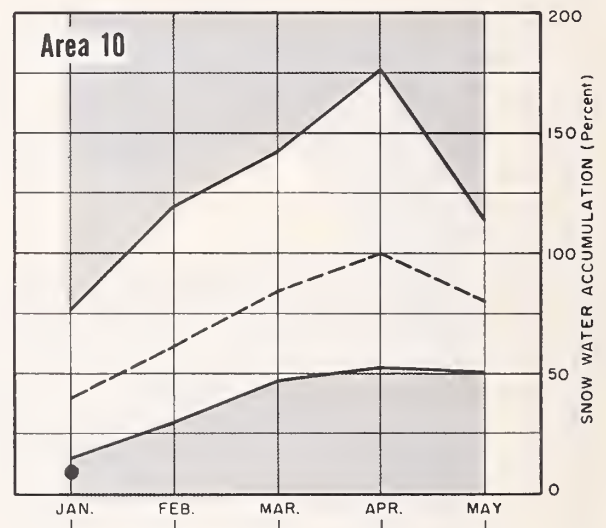
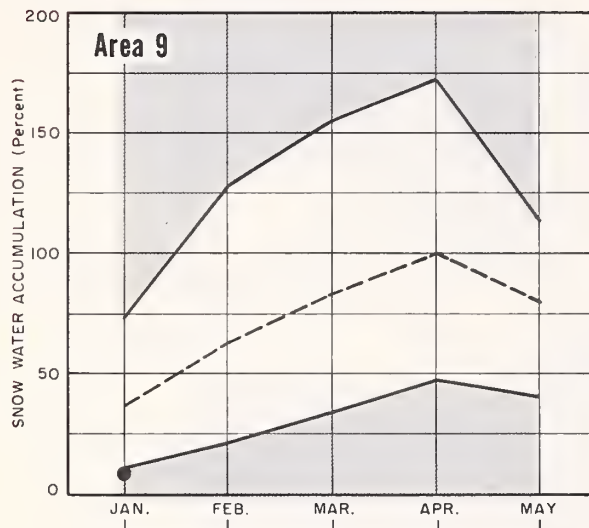
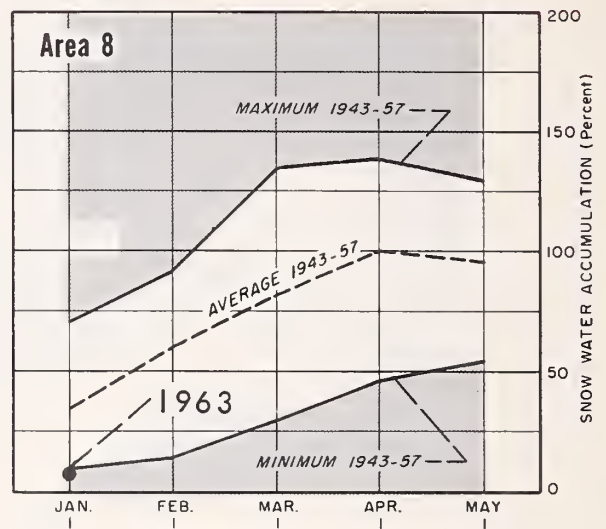
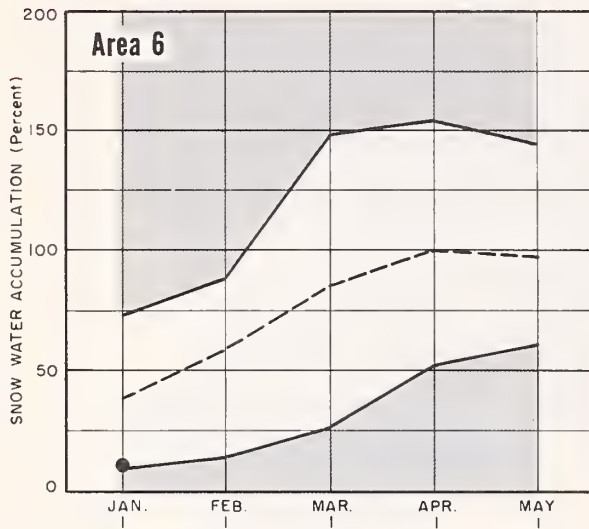
- AREA 1 - DWYHEE, MALHEUR WATERSHEDS
- AREA 2 - BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS
- AREA 3 - UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS
- AREA 4 - UPPER JOHN DAY WATERSHEDS
- AREA 5 - UPPER DESCHUTES, CRDOWED, WATERSHEDS
- AREA 6 - HODD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
- AREA 7 - LOWER COLUMBIA WATERSHEDS
- AREA 8 - WILLAMETTE WATERSHEDS
- AREA 9 - ROGUE, UMPQUA WATERSHEDS
- AREA 10 - KLAMATH WATERSHEDS
- AREA 11 - LAKE COUNTY, GOOSE LAKE WATERSHEDS
- AREA 12 - HARNEY BASIN WATERSHEDS



SNOW WATER ACCUMULATION in OREGON

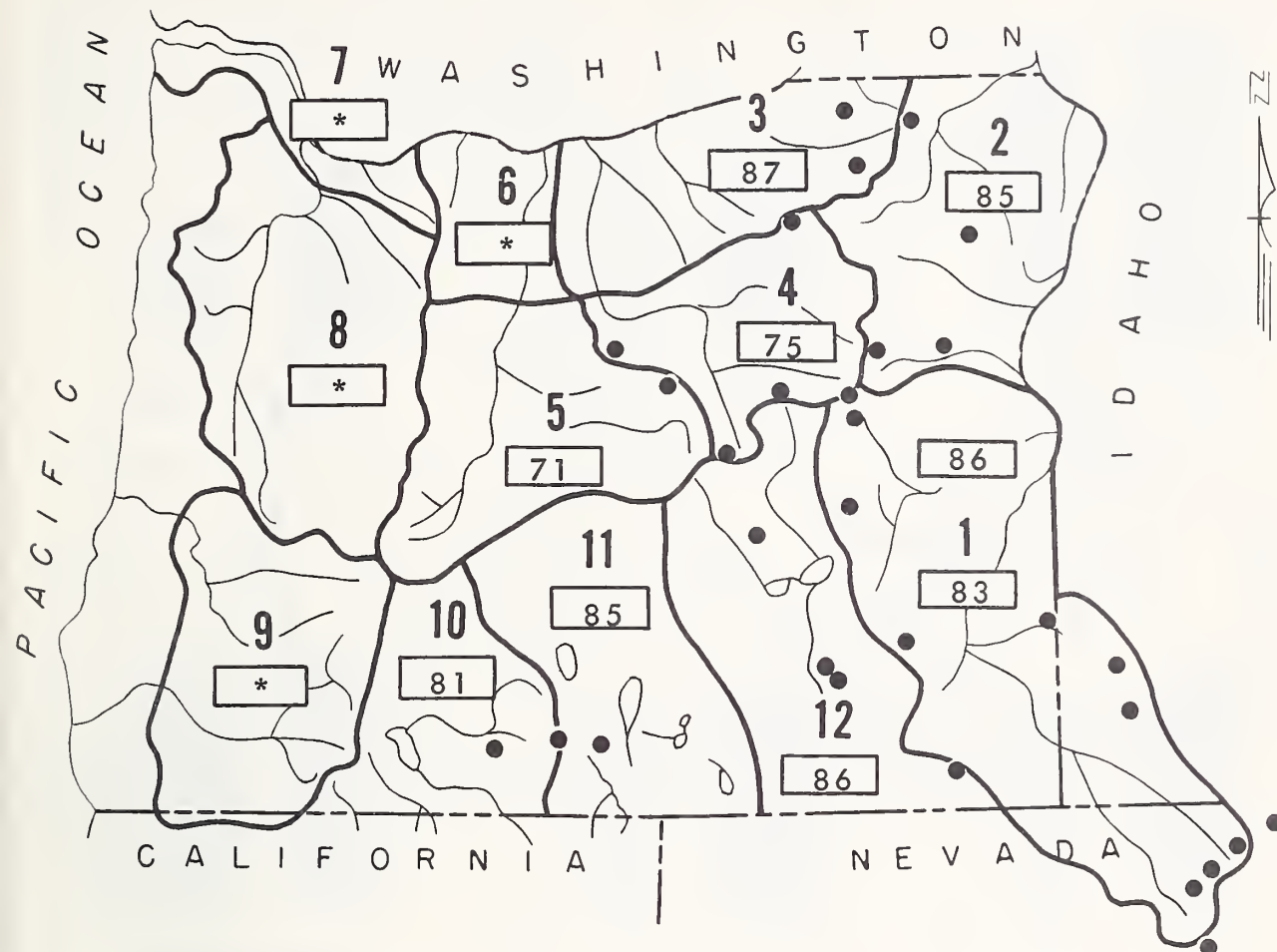
(Percent of average maximum accumulation)

JANUARY 1, 1963



MOUNTAIN SOIL MOISTURE in OREGON as percent of capacity

JANUARY 1, 1963



● Soil Moisture Station

**Moisture studies not yet developed in these areas.*

NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

VALLEY PRECIPITATION in OREGON ^a

JANUARY 1, 1963

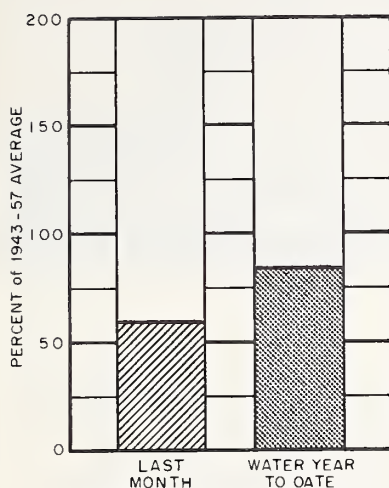


PRECIPITATION as PERCENT of the 1943 - 57 AVERAGE					
STATION	LAST MONTH	WATER YEAR TO DATE ^b	STATION	LAST MONTH	WATER YEAR TO DATE ^b
BAKER	113	147	LAKEVIEW	70	203
BEND	81	105	MEDFORD APT.	141	176
BURNS	61	151	NYSSA	95	129
ENTERPRISE	90	144	PENDLETON APT.	94	101
EUGENE APT	43	88	PORTLAND APT.	44	96
HEPPNER	107	109	ROSEBURG APT.	59	93
JOHN DAY	78	146	SALEM APT.	45	91
KLAMATH FALLS	64	129	THE DALLES	73	98

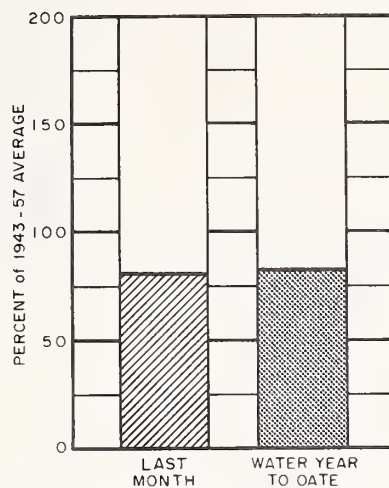
(a) Preliminary data furnished by the U.S. Weather Bureau. (b) Oct. 1 to date. (c) Report delayed.

CURRENT OREGON STREAMFLOW

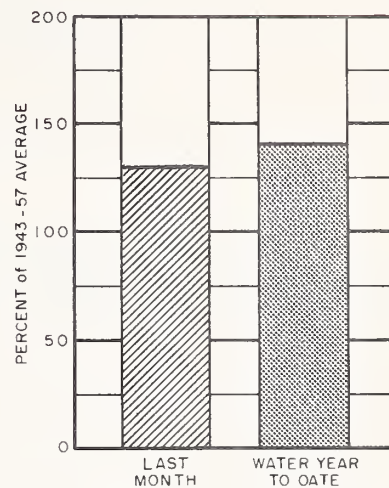
JANUARY 1, 1963



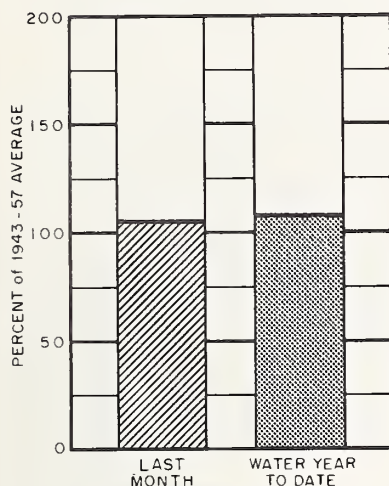
Owyhee Lake net inflow



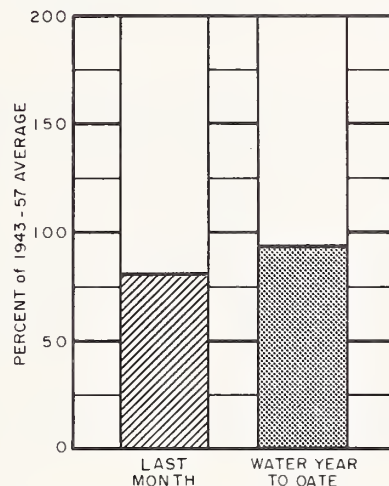
Umatilla near Umatilla



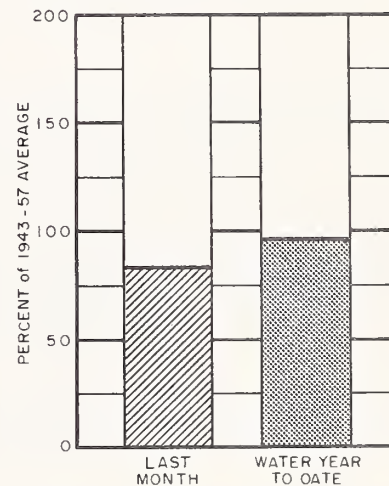
John Day at Service Creek



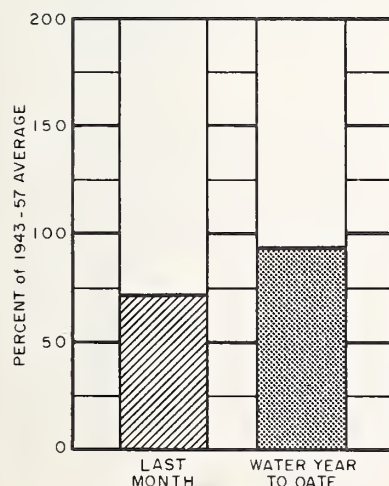
Deschutes at Moody



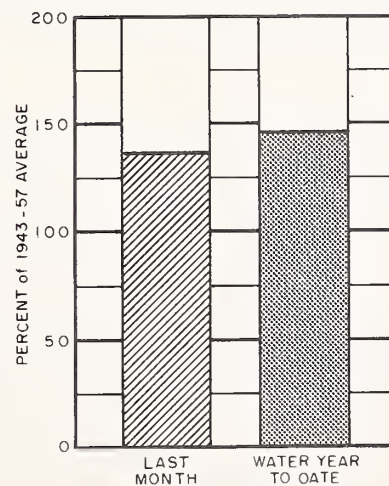
Hood and conduit near Hood River



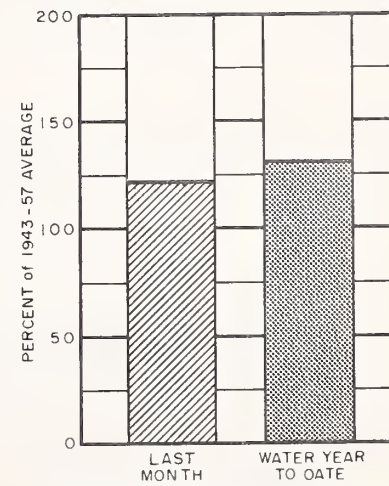
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow



WATER SUPPLY OUTLOOK OWYHEE, MALHEUR WATERSHEDS

OREGON

as of
JANUARY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK - The outlook for 1963 irrigation water supplies in Malheur County at this early winter date is reasonably good when one looks at present stored water supplies and good soil moisture conditions. However, present snow cover is close to the poorest of record due largely to above normal temperatures which caused rain rather than snow to fall on the watersheds. At least two, possibly three, months' time remains for additional snow accumulation.

SNOW COVER - There is slightly more snow on the Malheur River watershed, compared to the average for January 1, than on the Owyhee, but all of it totals up to only 12 percent or about one-tenth of the snow measured one year ago on January 1.

SOIL MOISTURE - Moisture content of the soils in the upper watershed of the Owyhee is reasonably good although not quite as satisfactory as last year and appears drier toward the eastern edge of the basin. It averages 83 percent of total capacity.

The soils in the Malheur River drainage are considerably wetter than last year and present moisture averages 86 percent of capacity compared with 73 percent one year ago.

RESERVOIR STORAGE - Owyhee reservoir contained 202,100 acre feet on January 1 compared with 68,000 a.f. one year ago. Average storage in the 15 year period 1943-57 has been 377,800 a.f. This is a good start for the 1963 irrigation supply for the Owyhee Project.

Warm Springs reservoir contained 22,800 acre feet on January 1 compared with 10,600 acre feet a year ago. At the same date, Agency Valley reservoir holds 14,600 a.f. compared with 9,500 a.f. the previous year. Both reservoirs now hold about half the usual amount but have a good start for the season.

It is reported that the new Bully Creek reservoir may soon begin storing water in its 31,000 acre foot space for use next season on 750 acres of land served by the Vale-Oregon Irrigation District. Full use of water on some 5,000 acres is apparently not planned for this next season.

(continued on next page)

Although Antelope reservoir is unreported, the Jordan Valley Irrigation District ended the 1962 season with a reported carry-over of 2,600 acre feet of water.

STREAMFLOW - The rate of inflow to reservoirs in the period since October 1 is one of the best indications that fall rains have made good progress toward restoring moisture in the upper watershed soils. Flow into Owyhee has been 83 percent of average (1943-57). Flows into Agency Valley at 122 percent and Warm Springs at 185 percent of average seem to coincide with much better soil moisture conditions in these watersheds this season.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair", "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Boulder Creek		
Bully Creek		
Cow Creek		
Jordan Creek		
Jordan Valley Irrig. Dist.	Forecasts begin in the February 1 report which will reach you about February 9, 1963.	
McDermitt Creek		
Oregon Canyon Creek		
Owyhee Project		
Succor Creek		
Ten Mile Creek		
Vale Oregon Irrig. Dist.		
Warm Springs Irrig. Dist.		
Willow Creek		

RESERVOIR STORAGE (1,000 Ac. Ft.) January 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Agency Valley	60.0	14.6	9.5	23.6
Antelope	55.0	f	0.0	2.5
Owyhee	715.0	202.1	68.0	377.8
Warm Springs	191.0	22.8	10.6	55.2

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of January 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^e
NO.	NAME				
2140	Malheur near Drewsey	c	April-Sept.	81	
		c	Feb.-July	124	
2175	Malheur, North Fork at Beulah ^d	c	April-Sept.	64	
1825	Owyhee Reservoir net Inflow ^g	c	April-Sept.	430	
		c	Feb.-July	594	

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Bear Creek (Nev.)	7800	72	16.9	10-31-62	7.0	8.7	8.6
Big Bend (Nev.)	6700	48	16.7	12-27-62	14.7 ^j	13.8	14.7
Blue Mountain Springs	5900	42	16.9	12-27-62	12.3	7.6	-
Crane Prairie	5375	48	18.2	12-27-62	16.5	-	-
Folly Farm	4450	30	12.5	12-19-62	9.0	-	-
Jack Creek, Lower (Nev.)	6800	48	8.7	12-27-62	7.3	7.9	7.7
Jordan Valley	4250	48	19.3	12-19-62	14.9	14.3	-
Mud Flat (Ida.)	5500	48	12.8	11-5-62	5.9	5.6	-
Rodeo Flat (Nev.)	6800	42	11.0	12-27-62	10.6	11.0	-
Stinking Water Summit	4800	48	21.9	12-19-62	20.9	20.7	21.2
Taylor Canyon (Nev.)	6200	48	15.1	h		11.6	11.8
Triangle (Ida.)	5150	48	16.2	11-5-62	12.0	13.9	-

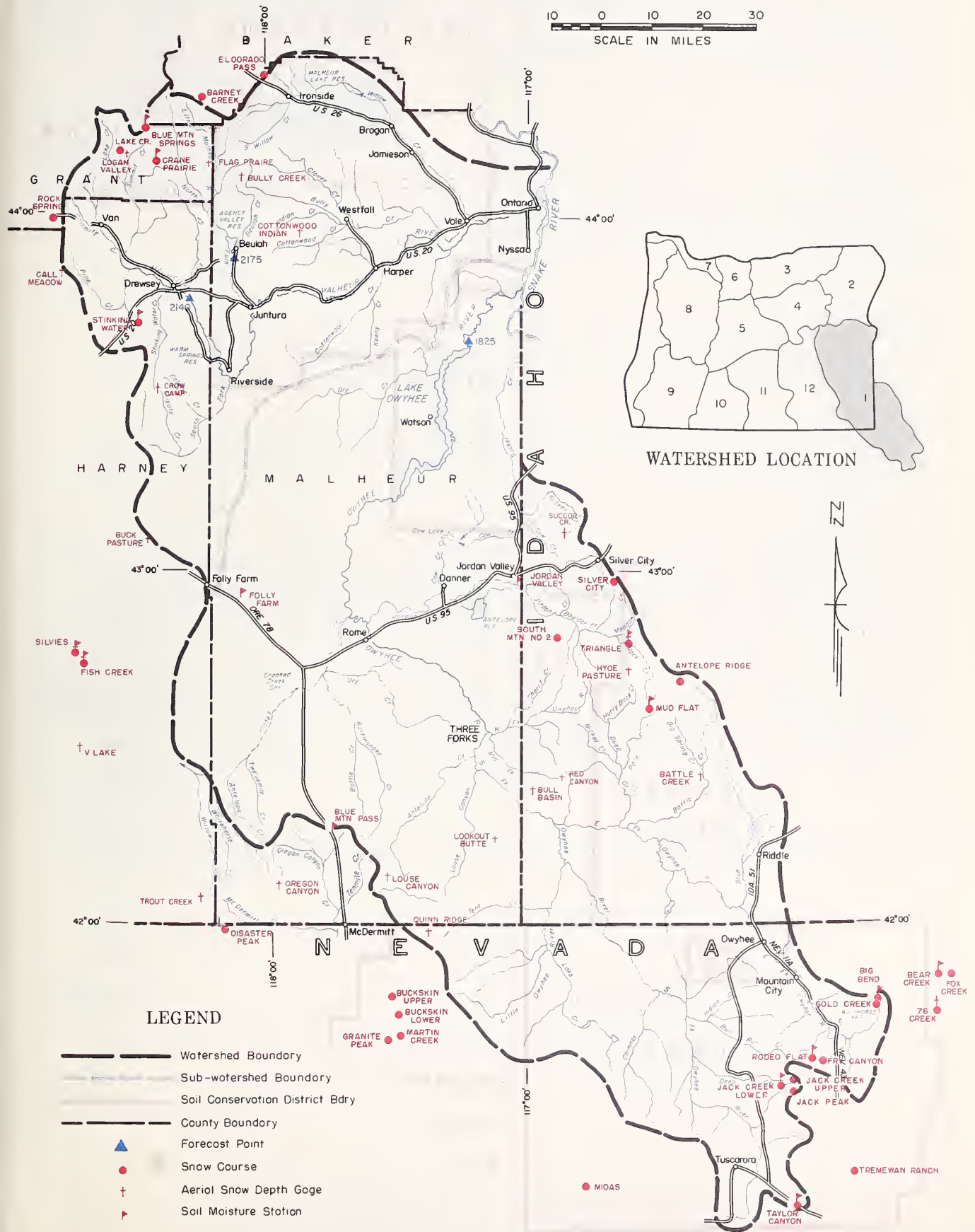
NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Antelope Ridge (Ida.)	5900	c				
Barney Creek	5950	c				
Battle Creek (Ida.)	5700	c				
Bear Creek ^e (Nev.)	7800	12/31	12	2.9	8.1	-

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) USBR records of inflow. (h) Not surveyed. (i) Nearest current data. (j) Partly estimated. (*) 1943-57 Adjusted average.

OWYHEE, MALHEUR WATERSHEDS



Owyhee, Malheur Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Big Bend (Nev.)	6700	12/27	T	T	3.3	--
Blue Mountain Springs	5900	12/27	8	3.1	10.5	6.9*
Buck Pasture ^e	5700	c				
Buckskin, Lower (Nev.)	6700	c				
Buckskin, Upper (Nev.)	7200	c				
Bull Basin ^e (Ida.)	5600	c				
Bully Creek ^e	5300	c				
Call Meadows ^e	5340	c				
Cottonwood-Indian ^e	4320	c				
Crane Prairie	5375	c				
Crow Camp ^e	5500	c				
Disaster Peak (Nev.)	6500	c				
Eldorado Pass	4600	12/28	T	T	1.5	--
Fish Creek	7900	c				
Flag Prairie ^e	4750	c				
Fox Creek (Nev.)	6800	c				
Fry Canyon (Nev.)	6700	12/27	T	T	3.5	--
Gold Creek (Nev.)	6600	12/27	T	T	2.5	--
Granite Peak (Nev.)	7800	c				
Hyde Pasture ^e (Ida.)	5800	c				
Jack Creek, Lower (Nev.)	6800	12/27	T	T	1.8	--
Jack Creek, Upper (Nev.)	7250	12/27	T	T	4.8	--
Jack Peak (Nev.)	8420	c				
Lake Creek	5120	12/27	1	0.1	6.0	--
Logan Valley ^e	5100	c				
Lookout Butte ^e	5650	c				
Louse Canyon ^e	6440	c				
Martin Creek (Nev.)	6700	c				
Midas (Nev.)	7200	c				
Mud Flat ^e (Ida.)	5500	c				
Oregon Canyon ^e	6950	c				
Quinn Ridge ^e (Nev.)	6300	c				
Red Canyon ^e (Ida.)	6500	c				
Rock Spring	5100	12/28	1	0.2	2.3	2.7*
Rodeo Flat (Nev.)	6800	12/27	T	T	2.5	--
76 Creek (Nev.)	7100	c				
Silver City (Ida.)	6400	12/30	3	0.8	8.1	7.9
Silvies	6900	c				
South Mountain #2 (Ida.)	6340	12/28	2	0.4	3.5	4.8
Stinking Water	4800	12/27	T	T	--	2.1*
Taylor Canyon (Nev.)	6200	12/27	0	0.0	1.8	--
Tremewan Ranch (Nev.)	5700	12/27	0	0.0	T	--
Triangle ^e (Ida.)	5150	c				
Trout Creek ^e	7800	c				
"Y" Lake ^e	6600	c				
Succor Creek (Ida.)	6100	c				

WATER SUPPLY OUTLOOK BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS OREGON

as of
JANUARY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for 1963 irrigation water supplies in Northern Oregon at this early winter date is reasonably good in spite of a very poor start on the mountain snowpack accumulation which is close to the poorest ever recorded for this time of the year.

Favorable aspects of the water outlook are the greater than average stored water supplies and a high percentage of moisture recharge in the soils of the upper watersheds.

SNOW COVER

Surveys at 14 snow courses show a complete absence of snow below 4500 feet elevation. The snowpack averages only one-third of last years' snow. Fortunately, there are 3 more months during which snow can be expected to fall on these watersheds.

SOIL MOISTURE

Above normal precipitation since October 1 has recharged the soils in the upper watersheds to the point where they now hold 85 percent of their capacity. Last year at this date, they were wet only up to 67 percent of capacity.

RESERVOIR STORAGE

Total water stored in Wallowa Lake is 21,000 acre feet compared with 12,200 a.f. a year ago. Average storage on January 1 is 15,800 a.f.

Unity Reservoir has a total of 9,200 acre feet compared with 5,500 a.f. a year ago and an average storage of 6,000 a.f. on January 1.

STREAMFLOW

Flow of Burnt River since October 1 has been nearly double that of last year and is equal to the 15 year average (1943-57). Similarly storage flows of other streams in Baker, Union and Wallowa counties appears to confirm the adequate recharge of soils by the fall rains.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Alder Slope Baker Valley Big Creek Clover Cr. (nr. N. Powder) Cove Durkee Eagle Valley Elgin Enterprise-Joseph Hereford-Bridgeport Imnaha River LaGrande-Island City Lostine-Wallowa No. Powder River-Wolf Cr. Pine Valley Powder River-Elk Creek Summerville Sumpter Valley Union-Hot Lake Unity	Forecasts begin in the February 1 report which will reach you about February 9, 1963.	

RESERVOIR STORAGE (1,000 Ac. Ft.) January 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Unity	25.2	9.2	5.5	6.0
Wallowa Lake	37.5	21.0	12.2	15.8

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of January 1, 1963

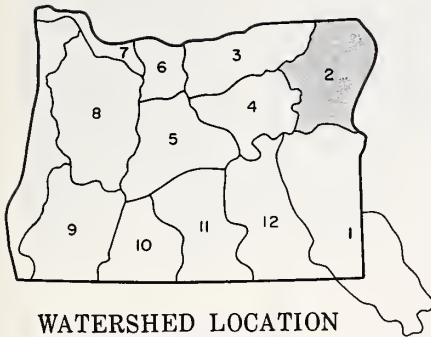
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^g
NO.	NAME				
3305	Bear near Wallowa	c	April-Sept.	74	
2730	Burnt near Hereford ^d	c	April-Sept.	45	
		c	Feb.-June	55	
3200	Catherine near Union	c	April-Sept.	73	
3190	Grande Ronde at LaGrande	c	March-Sept.	245	
		c	April-Sept.	202	
3295	Hurricane near Joseph	c	April-Sept.	49	
2920	Imnaha at Imnaha	c	April-Sept.	314	
3300	Lostine near Lostine	c	April-Sept.	133	
2755	Powder near Baker	c	April-Sept.	66	
		c	April-July	65	
3250	Wallowa, East Fork near Joseph ^d	c	April-Sept.	12.1	
		c	April-July	9.7	

SOIL MOISTURE

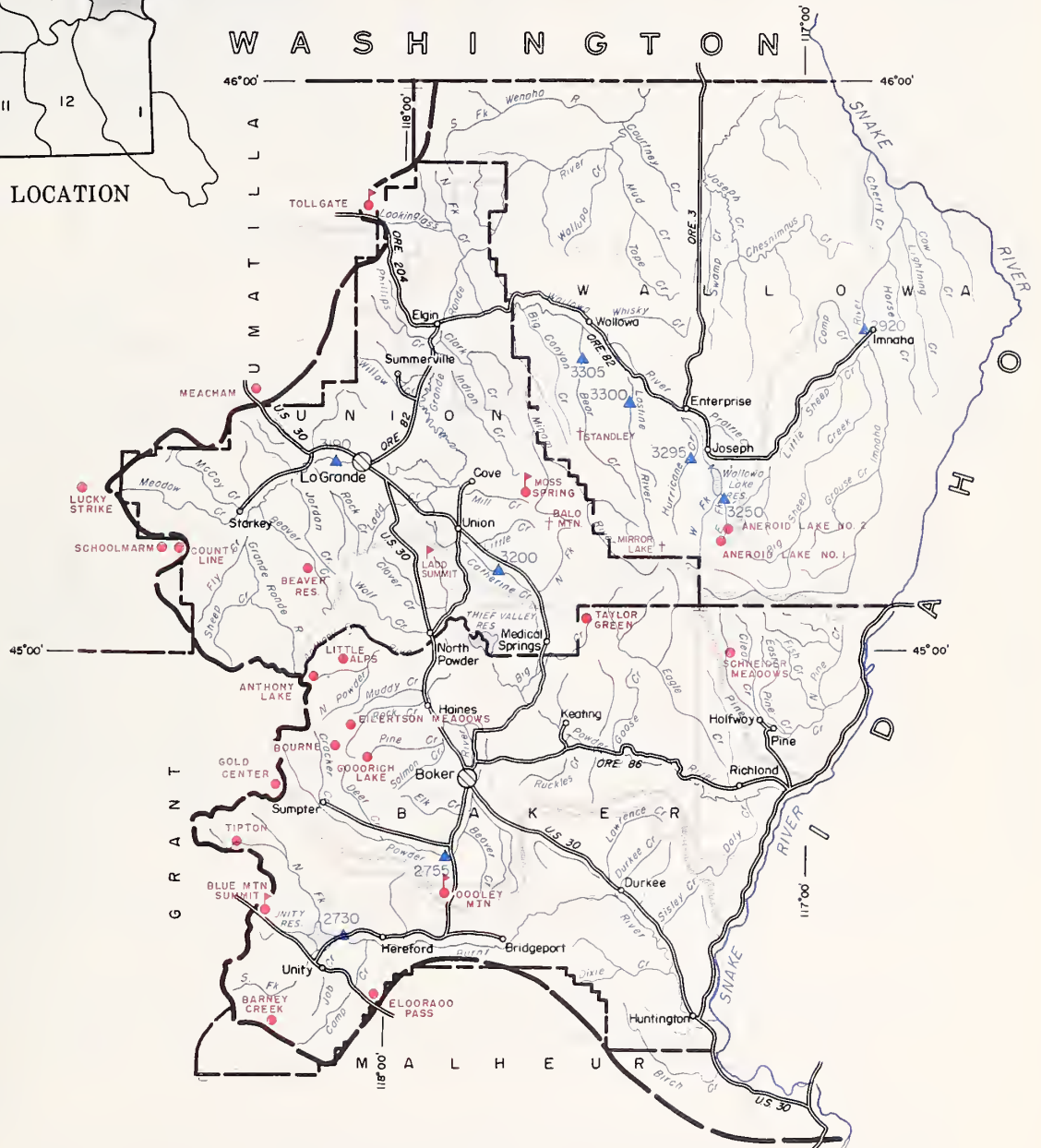
SOIL MOISTURE			PROFILE (Inches)		SOIL MOISTURE (Inches)			
STATION			DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME		ELEVATION						
Blue Mountain Summit		5100	36	16.8	12-28-62	11.9	5.8	9.3
Emigrant Springs		3925	48	22.3	12-20-62	19.9	15.0	19.0
Tollgate		5070	48	22.2	12-20-62	20.2	20.4	20.6
<p>NOTE: The soil moisture figures published herein are <u>not</u> comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.</p>								

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Water content partly estimated. (h) Not surveyed. (i) Nearest current data. (j) Partly estimated. (*) 1943-57 Adjusted averages.

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS



10 0 10 20 30
SCALE IN MILES



LEGEND

- Watershed Boundary
- - - Sub-watershed Boundary
- - - Soil Conservation District Bdry
- - - County Boundary
- ▲ Forecast Point
- Snow Course
- ✕ Soil Moisture Station
- ✕ Aerial Snow Depth Gage

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
NAME	ELEVATION	DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
					LAST YEAR	1943-57 AVERAGE
Aneroid Lake No. 1	7480	c				
Aneroid Lake No. 2	7000	c				
Anthony Lake	7125	12/26	21	5.8	14.6	12.6*
Bald Mountain ^e (Ore.)	6700	12/31	33	9.9	18.0	- -
Barney Creek	5950	c				
Beaver Reservoir	5340	12/28	6	1.3	6.1	5.1*
Big Sheep ^e	6200	c				
Blue Mountain Summit	5098	12/28	7	2.4	4.8	4.3
Bourne	5800	c				
County Line	4800	12/31	1	0.2	3.6	3.4*
Dooley Mountain	5430	12/28	6	1.6	4.9	4.0
Eilertson Meadows	5400	12/26	5	1.8	6.0	5.2*
Eldorado Pass	4600	12/28	T	T	1.5	- -
Gold Center	5340	c				
Goodrich Lake	6775	c				
Little Alps	6200	12/26	10	2.1	9.0	- -
Lucky Strike	5050	c				
Meacham	4300	12/20	0	0.0	4.5	- -
Mirror Lake ^e	8200	c				
Moss Spring	5850	12/27	8	2.4	11.6	10.8
Schneider Meadows	5400	c				
Schoolmarm	4775	12/31	1	0.1	2.9	2.8*
Standley ^e	7400	c				
Taylor Green	5740	c				
Tipton	5100	12/28	5	2.0	5.5	5.3*
Tollgate	5070	12/20	10	3.2	11.7	- -
TV Ridge ^e	5670	c				

"The Conservation of Water begins with the Snow Survey"



WATER SUPPLY OUTLOOK UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

OREGON

as of
JANUARY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for 1963 irrigation water supplies in the Umatilla-Walla Walla region of Oregon is only fair with mountain snowpack practically non-existent. Stored water supplies are currently much better than last year, but below average for this date.

SNOW COVER

There is no snow at all below 4500 feet elevation. The January 1 surveys find this year's snow to be only 14 percent of that on hand one year ago at this date. Fortunately there are at least two, maybe three, months' time remaining for accumulation of a good snowpack.

SOIL MOISTURE

Fall rains have been about normal and measurements of moisture in the upper watersheds indicate the recharge has come up to 87 percent of total capacity. This is better than the moisture conditions a year ago.

RESERVOIR STORAGE

Cold Springs reservoir now contains 27,450 acre feet compared with 19,000 acre feet one year ago. The average storage on January 1 is 20,200 a.f.

McKay reservoir has 10,640 acre feet in storage compared with 4,700 a.f. a year ago. The average storage at the beginning of the year is 26,000 acre feet.

STREAMFLOW

Flow of the Umatilla River at Umatilla* has been 82 percent of average since October 1. Inflow to McKay reservoir has been more than double that of last year up till now. Future streamflow will depend greatly on total precipitation and on a normal accumulation of a mountain snowpack.

* Preliminary data from U. S. Geological Survey, Portland, Oregon

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair", "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Birch Creek		
Butter Creek		
Dry Creek		
Dugger Creek		
Johnson Creek		
McKay Creek		
Mill Creek		
Mud Creek		
Pine Creek		
Rhea Creek		
Rock Creek		
Umatilla River (Cold Springs Reservoir)		
Umatilla River, Main		
Umatilla River (McKay Res.)		
Walla Walla River, Little		
Walla Walla River, Main		
Walla Walla River, N. Fork		
Walla Walla River, S. Fork		
Willow Creek		

Forecasts begin in the February 1 report which will reach you about February 9, 1963.

RESERVOIR STORAGE (1,000 Ac. Ft.) January 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cold Springs	50.0	27.4	19.0	20.2
McKay	73.8	10.5	4.7	26.0

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of January 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^c
NO.	NAME				
0320	Butter Creek near Pine City	c	April-Sept.	9.8	
0225	McKay near Pilot Rock	c	Feb.-Sept.	61	
		c	April-Sept.	31	
0200	Umatilla near Gibbon	c	April-Sept.	96	
0210	Umatilla at Pendleton	c	April-Sept.	187	
		c	April-July	182	
0100	Walla Walla, South Fork near Milton	c	April-Sept.	76	
		c	April-July	62	

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
NAME	ELEVATION	DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
Athena-Weston	1700	48	18.7	12-20-62	15.0	--	--
Battle Mountain Summit	4340	48	13.8	12-20-62	11.7	--	--
Emigrant Springs	3925	48	22.3	12-20-62	19.9	15.0	19.0
Tollgate	5070	48	22.2	12-20-62	20.2	20.4	20.6

NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Nearest current data. (h) Partly estimated. (**) Average for 5 or more years in base period.

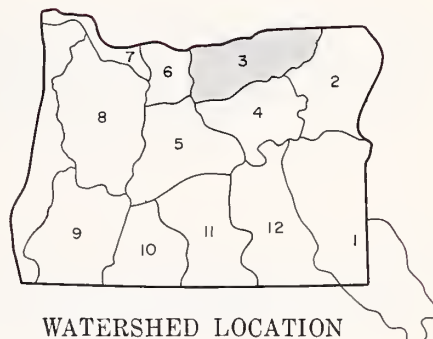
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

10 0 10 20 30
SCALE IN MILES



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- ▼ Soil Moisture Station



Umatilla, Walla Walla, Willow, Rock, Lower John Day Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Arbuckle Mountain	5400	c				
Battle Mountain Summit	4340	12/20	0	0.0	3.4	--
Emigrant Springs	3925	12/20	0	0.0	2.9	--
Lucky Strike	5050	c				
Meacham	4300	12/20	0	0.0	4.5	--
Tollgate	5070	12/20	10	3.2	11.7	--



WATER SUPPLY OUTLOOK UPPER JOHN DAY WATERSHEDS

OREGON

as of
JANUARY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1963 water supply outlook is fair for the Upper John Day Basin at this early date. Snow cover is well below normal, but soil moisture is much better than last year at this time and is expected to help make up for the deficit in snow.

SNOW COVER

Snow cover is conspicuously absent below 4500 feet elevation. The area, as a whole, is only 31 percent of average and about one-fifth of last year on January 1. Fortunately about three-fifths of an average year's snow accumulates after January 1, so there is a chance to "catch up" during the next two or three months.

SOIL MOISTURE

Watershed soil moisture is much better than last year. Moisture measurements made the last few days of December indicate the soil profile now averages 75 percent of total capacity. Last year it was only 51 percent of total capacity.

STREAMFLOW

Flow of the John Day at Service Creek was 131 percent of average for December and averages 139 percent of the 15 year average (1943-57) for the October-December period. This verifies good soil moisture conditions in the area.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair", "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Beech Creek Beech Creek-Fox-Long Cr. Bridge-Mountain Creeks Camas Creek Cherry Creek Indian-Pine Creeks John Day River, Main Fork John Day River, Mid. Fork John Day River, N. Fork John Day River, S. Fork Monument-Kimberly Strawberry Creek	Forecasts begin in the February 1 report which will reach you about February 9, 1963.	

RESERVOIR STORAGE (1,000 Ac. Ft.) January 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of January 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
0385	John Day at Prairie City	c	April-Sept.	54	
		c	March-July	59	
0440	John Day, Middle Fork at Ritter	c	April-Sept.	135	
		c	March-July	158	
0375	Strawberry near Prairie City	c	April-Sept.	9.1	

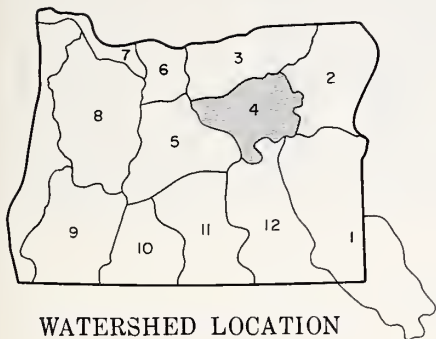
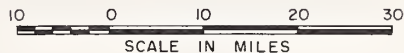
SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Battle Mountain Summit	4340	48	16.8	12-28-62	11.9	- -	- -
Blue Mountain Springs	5900	42	16.9	12-27-62	12.3	7.6	- -
Blue Mountain Summit	5100	36	16.8	12-28-62	11.9	5.8	9.3
Derr	5670	24	g				
Marks Creek	4540	36	14.1	12-27-62	10.0	9.5	10.2
Snow Mountain	6300	48	g				
Starr Ridge	5150	36	10.6	12-27-62	10.3	6.8	7.9

NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Nearest current data. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

UPPER JOHN DAY WATERSHEDS



LEGEND

- Watershed Boundary
- - - Sub-watershed Boundary
- Soil Conservation District Bdry
- - - County Boundary
- ▲ Forecast Point
- Snow Course
- ✚ Soil Moisture Station
- † Aerial Snow Depth Gage

Upper John Day Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Anthony Lake	7125	12/26	21	5.8	14.6	12.6*
Arbuckle Mountain	5400	c				
Battle Mountain Summit	4340	12/20	0	0.0	3.4	- -
Beech Creek Summit	4800	12/28	0	0.0	4.7	2.2*
Blue Mountain Spring	5900	12/27	8	3.1	10.5	6.9*
Blue Mountain Summit	5098	12/28	7	2.4	4.8	4.3
Derr	5670	c				
East Fork Canyon ^e	5700	c				
Gold Center	5340	c				
Indian Creek Butte ^e	6550	c				
Izee Summit	5293	12/27	0	0.0	5.5	4.6*
Lucky Strike	5050	c				
Marks Creek	4540	12/27	0	0.0	6.1	- -
Ochoco Meadows	5200	c				
Olive Lake	6000	12/28	9	2.3	11.6	8.4*
Schoolmarm	4775	12/31	1	0.1	2.9	2.8*
Snow Mountain	6300	c				
Starr Ridge	5150	12/27	0	0.0	4.5	2.8*
Tipton	5100	12/28	5	2.0	5.5	5.3*
Williams Ranch	4500	g				

WATER SUPPLY OUTLOOK UPPER DESCHUTES, CROOKED WATERSHEDS OREGON

as of
JANUARY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1963 water supply outlook for Deschutes, Jefferson, and Crook counties is good in spite of a conspicuously short snow pack. Reservoir storage is above average and watershed soils are wetter than last year on January 1.

SNOW COVER

Measurements on four key snow courses in this area average only about 24 percent of the usual amount for January 1 and only 17 percent of last year on this date. Little, if any, snow was present below 4,500 feet elevation on the watersheds.

SOIL MOISTURE

Moisture in the top 3-4 feet of soil at the Marks Creek station above Ochoco reservoir is 71 percent of total capacity. This is slightly better than last year due to good fall rains over most of the area.

RESERVOIR STORAGE

Ochoco reservoir now holds 27,300 acre feet or 129 percent of the January 1 average. Last year, it held only 6,200 acre feet.

Prineville reservoir has spilled some water to make room for spring runoff and now holds 92,100 acre feet which is 95 percent of last years' storage on January 1.

Crane Prairie, Crescent Lake, and Wickiup are all above average and above last year. They hold 39,800, 51,800, and 119,700 acre feet respectively.

STREAMFLOW

Streamflow on the main Deschutes has been a little better than average since October 1 as a result of good fall rains priming the soils.

The Deschutes at Moody* has averaged 108 percent of the 1943-57 average for the October-December period.

Flow of the Crooked River since October 1 has been considerably greater than average with better than 40,000 acre feet released from Prineville to make room for flow yet to come.

* Preliminary data furnished by U. S. Geological Survey, Portland, Oreton

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Arnold Irrigation District	Forecasts begin in the February 1 report which will reach you about February 9, 1963.	
Bear Creek		
Beaver Creek		
Camp Creek		
Central Ore. Irrig. Dist.		
Crooked River		
Deschutes River		
Hay-Trout Creeks		
Lone Pine Irrig. Dist.		
Mill Creek		
North Unit Irrig. Dist.		
Ochoco Creek		
Sisters Irrigation Dist.		
Snow Creek Irrig. Dist.		
Squaw Creek Irrig. Dist.		
Swalley Ditch		
Tumalo Project		
Walker Basin Irrig. Dist.		

RESERVOIR STORAGE (1,000 Ac. Ft.) January 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Crane Prairie	55.3	39.8	34.0	35.5
Crescent Lake	117.2	51.8	38.0	43.6
Ochoco	47.5	27.3	6.2	21.1
Prineville	153.0	92.1	96.5	- -
Wickiup	182.0	119.7	115.8	102.0
Note: The U. S. Bureau of Reclamation indicates that dead storage in the amount of 5360 acre feet may be included in the current storage figure for Crescent Lake.				

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of January 1, 1963

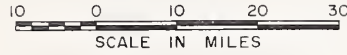
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
0535	Crane Prairie Reservoir total Inflow	c	April-Sept.	143	
0600	Crescent at Crescent Lake ^d	c	March-July	28	
		c	April-Sept.	31	
0795	Crooked near Post	c	Feb.-July	207	
		c	April-Sept.	129	
0645	Deschutes at Benham Falls ^d	c	April-Sept.	602	
		c	April-July	404	
0500	Deschutes below Snow Creek	c	April-Sept.	74	
0630	Deschutes, Little near Lapine ^d	c	Feb.-July	129	
		c	April-Sept.	113	
0848	Ochoco Reservoir net Inflow	c	Feb.-June	51	
		c	April-Sept.	32	
0555	Odell near Crescent	c	April-Sept.	34	
0750	Squaw near Sisters	c	April-Sept.	55	
0730	Tumalo near Bend ^d	c	April-Sept.	55	

SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Derr	5670	24		i			
Marks Creek	4540	36	14.1	12-27-62	10.0	9.5	10.2
Snow Mountain	6300	48		i			
NOTE: The soil moisture figures published herein are <u>not</u> comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.							

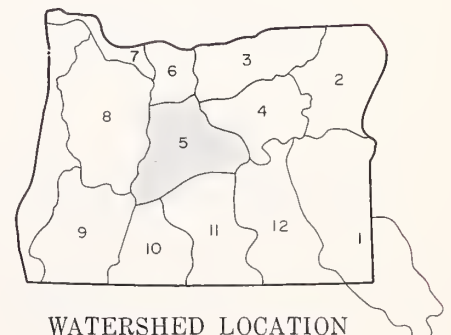
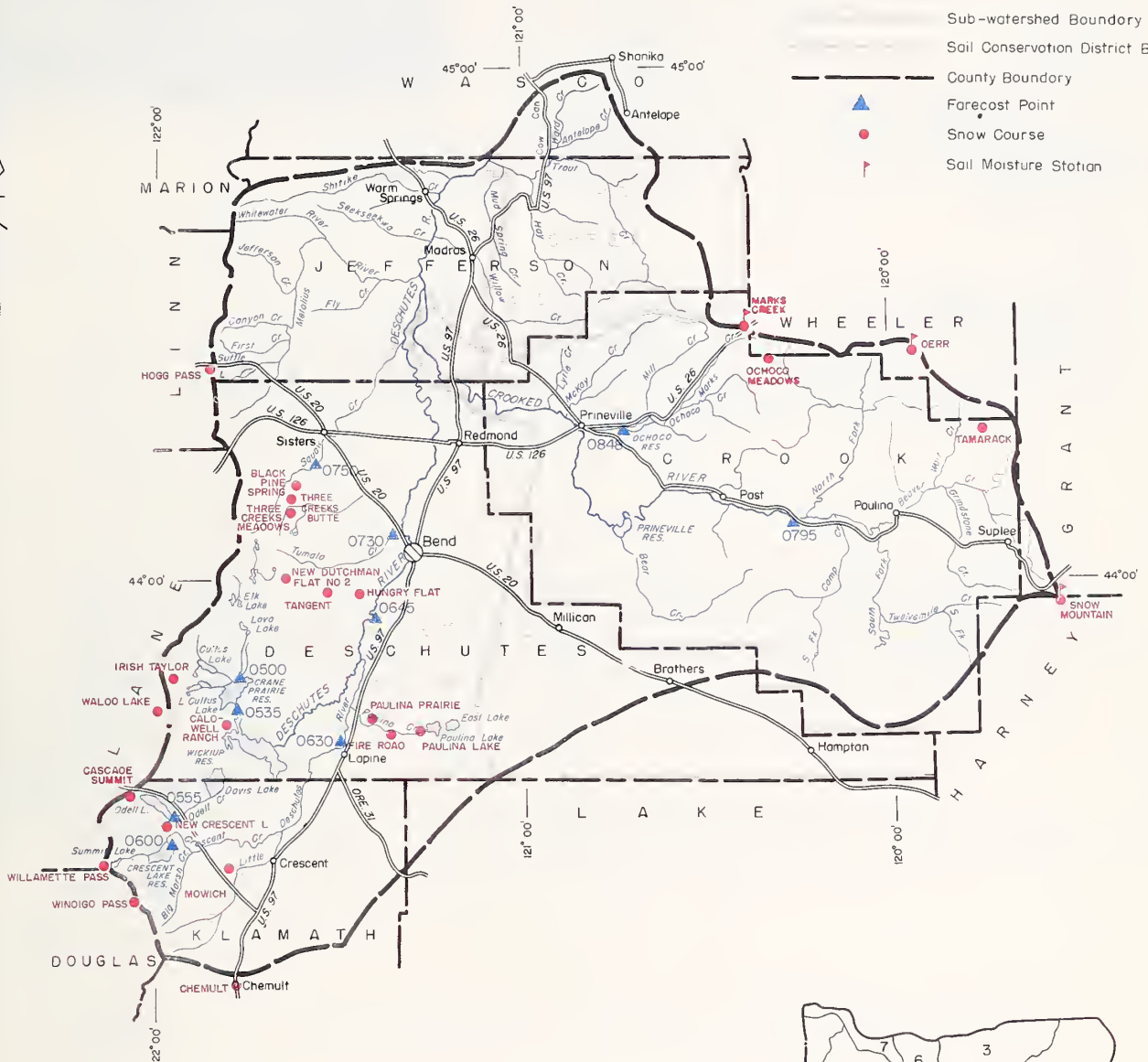
(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated. (*) 1943-57 Adjusted average. (h) Nearest current data.

UPPER DESCHUTES, CROOKED WATERSHEDS



LEGEND

- Watershed Boundary
- - - Sub-watershed Boundary
- - - Soil Conservation District Bdry
- - - County Boundary
- ▲ Forecast Point
- Snow Course
- ↑ Soil Moisture Station



WATERSHED LOCATION

Upper Deschutes, Crooked Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Black Pine Spring	4600	c				
Caldwell Ranch	4400	c				
Cascade Summit	4880	12/31	12	4.3	18.7	14.9*
Chemult	4760	12/27	4	1.1	5.8	5.5*
Derr	5670	c				
Fire Road	5050	c				
Hogg Pass	4755	12/27	12	4.1	25.0	18.4
Hungry Flat	4400	c				
Irish-Taylor	5500	c				
Marks Creek	4540	12/27	0	0.0	6.1	- -
Mowich	4700	c				
New Crescent Lake	4800	c				
New Dutchman Flat No. 2	6400	c				
Ochoco Meadows	5200	c				
Paulina Lake	6330	c				
Paulina Prairie	4285	c				
Snow Mountain	6300	c				
Tamarack	4800	c				
Tangent	5400	c				
Three Creeks Butte	5200	c				
Three Creeks Meadows	5600	c				
Waldo Lake	5500	c				
Willamette Pass	5600	c				
Windigo Pass	5800	c				



WATER SUPPLY OUTLOOK HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

OREGON

as of
JANUARY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for 1963 irrigation water supplies in Hood River - Wasco County area is only fair at this early winter date. The snow pack is one of the poorest ever measured. Soil moisture is good as a result of near average rainfall since October 1st, and should favor runoff if subsequent winter storms produce a good snow pack on the watershed.

SNOW COVER

Water content of the mountain snow pack is only one-fourth of the January 1 average for the 1943-57 period and 16 percent of last January 1st. Warm temperatures have melted any snow that fell below about 3700 feet. Fortunately, there are two to three remaining months during which snow can accumulate if nearer normal temperatures prevail.

SOIL MOISTURE

Watershed soils have been fairly well primed by near average rainfall for the October-December period.

RESERVOIR STORAGE

Storage in Clear Lake is 3,200 acre feet. Last year it held 2,900 acre feet on January 1.

STREAMFLOW

The flow of Hood River* was 81 percent of the 1943-57 average for December and averages 94 percent for the October-December period.

*Preliminary data from U. S. Geological Survey, Portland, Oregon

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair", "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Aldridge Ditch Badger Creek Dee Irrigation District East Fork Irrig. Dist. Farmers Irrig. Dist. Hood River Irrig. Dist. Juniper Flat Middle Fork Irrig. Dist. Mile Creeks Mill Creek Mount Hood Irrig. Dist. Rock-Gate-Threemile Crs. Tygh Creek White River	Forecasts begin in the February 1 report which will reach you about February 9, 1963.	

RESERVOIR STORAGE (1,000 Ac. Ft.) January 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	- -	3.2	2.9	- -

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of January 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
1210	Hood near Hood River ^d	c	April-Sept.	365	
1185	Hood, West Fork near Dee	c	April-July	311	
		c	April-Sept.	174	
		c	April-July	151	
1015	White below Tygh Valley	c	April-Sept.	178	
		c	April-July	161	

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Brooks Meadows	4300	c				
Clear Lake	3500	12/27	0	0.0	5.3	- -
Clear Lake (Experimental)	3500	12/27	0	0.0	6.8	---
Cooper Spur	3490	12/31	T	T	5.9	- -
Greenpoint Reservoir	3400	c				
Knebal Springs	3850	c				
Parkdale	1770	12/31	0	0.0	0.0	- -
Phlox Point	5600	12/26	18	8.7	35.3	29.8*
Red Hill	4400	c				
Still Creek	3700	12/27	6	2.2	12.4	11.8*
Tilly Jane	6000	c				
Ulrich Ranch Junction	3350	c				
Upper Valley	2530	12/31	0	0.0	3.3	- -

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

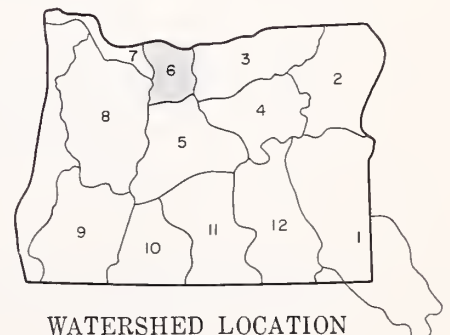
HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

10 0 10 20
SCALE IN MILES



LEGEND

- Watershed Boundary
- - - Sub-watershed Boundary
- - - Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course



WATER SUPPLY OUTLOOK LOWER COLUMBIA WATERSHEDS OREGON

as of
JANUARY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1963 water supply outlook for the Columbia River and its tributaries is for below normal flow during the snowmelt season. Climatic conditions during the fall months of 1962 have been recorded as above normal rainfall and resultant streamflow. Temperatures have been much above normal. Such snowfall as has occurred in the mountains has melted except at the highest mountain elevations.

SNOW COVER

The existing snowpack in mountain areas over all the basin is extremely deficient except for the Continental Divide in Northern Montana. Snow courses at lower mountain elevations are bare. Those at higher elevations have about one-half of the usual seasonal accumulation to date.

SOIL MOISTURE

The water supply outlook is somewhat better than the present snow cover would indicate. Mountain soils are wet except for some sections of the Upper Snake River drainage, and flow of streams during the early winter months indicate well-primed watersheds. Reservoir storage for the principal irrigated areas along the Snake is near average. Some deficiency in storage exists on the Snake and Lower Columbia tributaries in Oregon. Further, the longer segment of the snowfall season lies ahead.

STREAMFLOW

The flow of the Columbia River at The Dalles * has been above normal since October 1st.

<u>Month</u>	<u>Percent of Normal Discharge (1943-57)</u>
October	111 adjusted for storage
November	116 " " "
December	124 " " "

*From preliminary data furnished by U. S. Geological Survey, Portland, Oregon

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of January 1, 1963

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^d
1057	Columbia at The Dalles	c c	April-Sept. April-June	106,100 72,000	

HISTORICAL DATA (Columbia River at The Dalles)

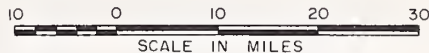
YEAR	STREAMFLOW ^c (1,000 A.F.)			PEAK ^e (1,000 c.f.s.)	DATE
	APR. - SEPT.	APR. - JUNE	MAY - JUNE		
1943	115,000	75,300	52,400	541	June 21
1944	61,900	39,200	32,100	326	June 19
1945	81,600	54,600	47,300	505	June 8
1946	108,100	75,400	59,600	581	May 30
1947	100,300	70,000	56,800	536	May 11
1948	130,500	94,600	81,900	999	May 31
1949	95,700	71,400	56,000	622	May 18
1950	120,400	74,700	61,200	744	June 25
1951	113,000	75,600	59,100	597	May 26
1952	107,700	77,500	57,300	557	May 28
1953	100,600	64,900	55,800	609	June 17
1954	119,500	70,500	59,300	561	May 23
1955	99,500	58,300	50,300	545	June 26
1956	131,400	96,900	75,800	815	June 3
1957	105,700	80,500	67,200	700	May 22
1943-57 Avg.	106,100	72,000	58,100	616	
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23
1960	97,000	64,000	48,000	442	June 6

LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)^f

VANCOUVER ^g GAGE (Weather Bu.)	FLOW AT THE DALLES (1,000 c.f.s.)	DRAINAGE DISTRICT PUMPHOUSE						
		SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
		RIVER MILES						
		118.9	96.0	91.0	77.0	62.0	52.0	47.0
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	940	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	890	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	840	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	790	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	750	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	700	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	660	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	630	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	590	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	560	27.2	20.7	19.5	16.4	12.6	10.6	9.6
20	530	26.2	19.8	18.6	15.5	12.1	10.2	9.4
19	510	25.5	19.2	18.0	15.0	11.8	10.0	9.3
18	480	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	450	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	430	22.4	16.5	15.5	13.0	10.5	9.3	8.7

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Observed flow corrected for storage in F.D.R., Kootenai, Pend Oreille, Flathead, Hungry Horse, Lake Chelan, Coeur d'Alene and Grand Coulee Equalizer. (d) Not scheduled. (e) Observed peak. (f) Based on Corps of Engineers automatic water stage recorder data. (g) Vancouver Weather Bureau gage zero is 1.82' above M.S.L. All other readings are in feet above M.S.L.

LOWER COLUMBIA WATERSHEDS



WATERSHED LOCATION

LEGEND

-  Watershed Boundary
 Sub-watershed Boundary
 Soil Conservation District Bdry
 County Boundary
 River Miles
 Snow Course



WATER SUPPLY OUTLOOK WILLAMETTE WATERSHEDS OREGON

as of

JANUARY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for 1963 water supplies in the Willamette Valley is only fair as of this early date. Snow cover is absent below 4,500 feet elevation and measurements at higher elevation indicate one of the poorest years of record.

SNOW COVER

Snow measurements at key courses along the Cascades show only 16 percent of the January 1 average for the 1943-57 period and only 12 percent of the snow measured last year at this time. Warmer than normal temperatures have melted the snow below 4,500 feet and valley precipitation has been a little below average for the October-December period.

SOIL MOISTURE

Watershed soils have been fairly well primed by melting snow at higher elevations and by near average fall rains lower on the watershed and should favor runoff.

RESERVOIR STORAGE

The six multi-purpose reservoirs on Willamette tributaries are operated according to a pre-arranged flood control plan by the U. S. Corps of Army Engineers. These reservoirs will be filled as runoff begins this spring.

STREAMFLOW

Streamflow during December was 82 percent of the 1943-57 average on the Middle Fork of the Willamette*. The October flow was about 31 percent above average with the November flow about average, making the average for the period October-December 95 percent.

* Preliminary data from U. S. Geological Survey, Portland, Oregon

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Calapooya Clackamas McKenzie Molalla Santiam, North Santiam, South Willamette, Coast Fork Willamette, Middle Fork	Forecasts begin in the February 1 report which will reach you about February 9, 1963.	

RESERVOIR STORAGE (1,000 Ac. Ft.) January 1, 1963

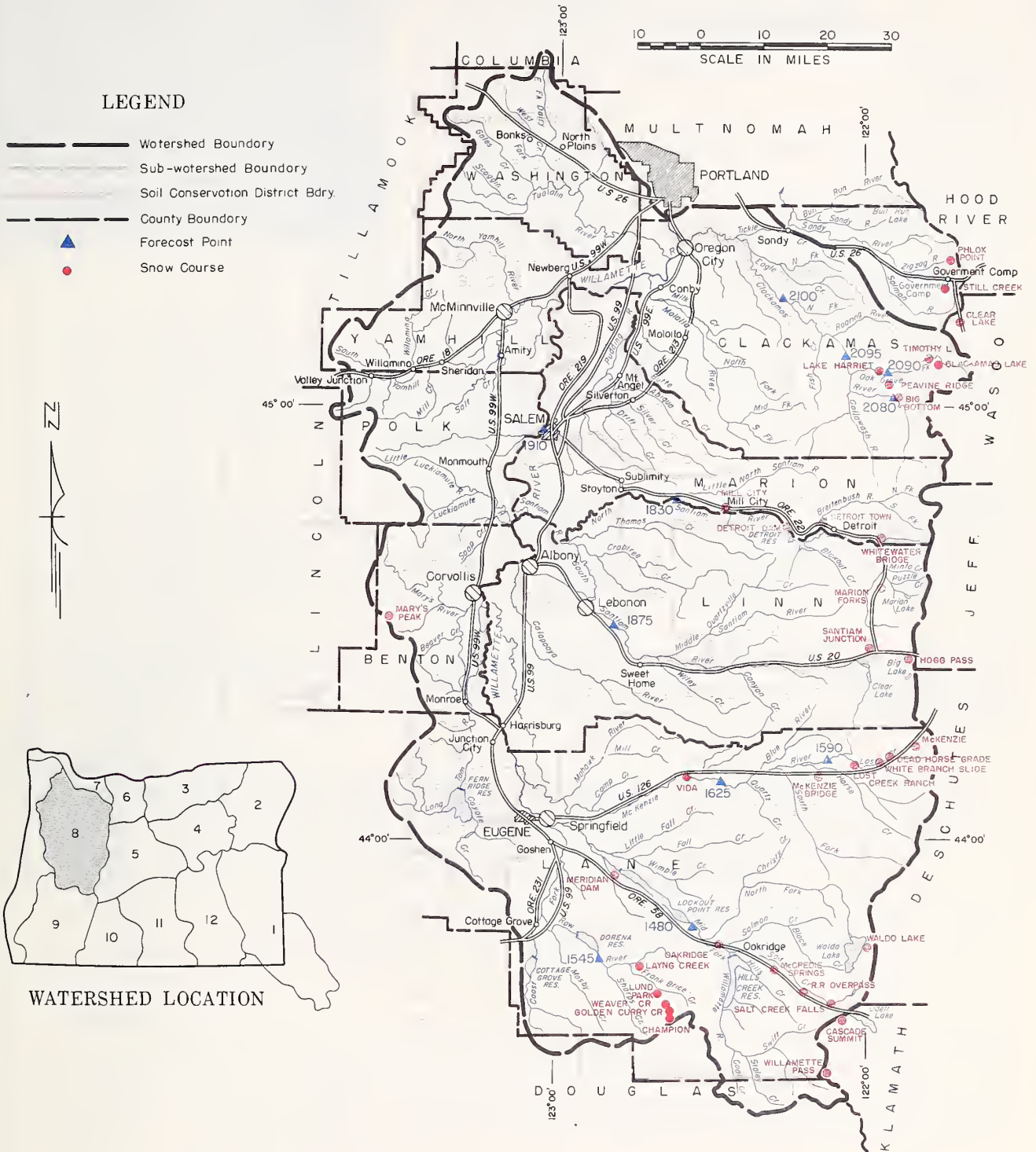
RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottage Grove	30.8*	0.0	0.0	3.1*
Detroit	299.9*	0.0	26.1	- -
Dorena	70.5*	0.1	0.1	5.2
Fern Ridge	94.2*	0.2	0.2	15.8
Hills Creek Res.	249.0*	0.0	7.0	- -
Lookout Point	337.2*	0.0	31.3	- -
*Multiple purpose reservoir--space reserved primarily for flood runoff.				

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of January 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
2080	Clackamas at Big Bottom	c	April-Sept.	184	
		c	April-July	150	
2100	Clackamas at Estacada	c	April-Sept.	879	
		c	April-July	763	
2095	Clackamas above Three Lynx	c	April-Sept.	674	
		c	April-July	578	
1590	McKenzie at McKenzie Bridge	c	April-Sept.	640	
		c	April-July	488	
1625	McKenzie near Vida	c	April-Sept.	1362	
		c	April-July	1120	
2090	Oak Grove Fork above Power Intake	c	April-Sept.	198	
		c	April-July	156	
1545	Row near Dorena	c	April-Sept.	114	
		c	April-July	109	
1830	Santiam, North at Mehama ^d	c	April-Sept.	968	
		c	April-July	866	
1875	Santiam, South at Waterloo	c	April-Sept.	652	
		c	April-July	616	
1480	Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge	c	April-Sept.	909	
		c	April-July	804	
1910	Willamette at Salem ^d	c	April-Sept.	5461	
		c	April-July	4942	

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

WILLAMETTE WATERSHEDS



Willamette Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Big Bottom	2118	12/30	0	0.0	T	2.6*
Cascade Summit	4880	12/31	12	4.3	18.7	14.9*
Champion	4500	1/2	0	0.0	12.4	10.5*
Clackamas Lake	3400	c				
Clear Lake	3500	12/27	0	0.0	5.3	- -
Clear Lake (Experimental)	3500	12/27	0	0.0	6.8	- -
Dead Horse Grade	3800	1/2	0	0.0	11.6	8.7*
Detroit Town	1610	12/27	0	0.0	0.0	0.3
Detroit Dam	1580	12/27	0	0.0	0.0	0.4
Golden Curry Creek	3136	1/2	0	0.0	0.0	4.3*
Hogg Pass	4755	12/27	12	4.1	25.0	18.4
Lake Harriet	2045	12/30	0	0.0	T	1.1*
Layng Creek	1200	1/2	0	0.0	0.0	T
Lost Creek Ranch	1956	1/2	0	0.0	2.7	0.0
Lund Park	1740	1/2	0	0.0	0.0	1.4
Marion Forks	2730	12/27	0	0.0	7.6	5.7
Marys Peak	3620	c				
McCredie Springs	2120	12/31	0	0.0	0.0	0.5
McKenzie	4800	1/2	14	5.2	30.4	20.4*
McKenzie Bridge	1372	1/2	0	0.0	0.0	T
Meridian Dam	750	12/31	0	0.0	0.0	0.0
Mill City	826	12/27	0	0.0	0.0	0.0
Oakridge	1310	12/31	0	0.0	0.0	0.1
Peavine Ridge	3500	g				
Phlox Point	5600	12/26	18	8.7	35.3	29.8*
Railroad Overpass	2750	12/31	0	0.0	0.0	1.4*
Salt Creek Falls	4000	12/31	0	0.0	10.0	7.1*
Santiam Junction	3990	12/27	4	1.0	15.9	10.7
Still Creek	3700	12/27	6	2.2	12.4	11.8*
Timothy Lake	3295	12/30	T	T	7.3	- -
Vida	800	1/2	0	0.0	0.0	0.0
Waldo Lake	5500	c				
Weaver Creek	2440	1/2	0	0.0	0.0	0.4
White Branch Slide	2800	1/2	0	0.0	3.8	3.4*
Whitewater Bridge	2175	12/27	0	0.0	2.9	3.2*
Willamette Pass	5600	c				

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK ROGUE, UMPQUA, WATERSHEDS

OREGON

as of

JANUARY 1, 1963



U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for 1963 irrigation water supplies for the Rogue-Umpqua area at this early winter date is fairly good although the mountain snow pack is close to the poorest of record. Stored water supplies are better than a year ago and soils in the mountain watersheds have been well recharged.

SNOW COVER

Practically no snow exists below 4,000 feet at the beginning of the year. Water content of the snow pack above 4,000 feet is one-fourth of the 15 year average (1943-75) and only one-fourth of last years' snow at this date. Fortunately, at least two and possibly three months remain for snow to accumulate in the mountains.

SOIL MOISTURE

Heavy fall precipitation * (176 percent normal since October 1 at Medford) which resulted in substantial flooding on Rogue River, has amply recharged the soils in the watersheds.

RESERVOIR STORAGE

Stored water supplies for the Medford and Rogue River Valley Irrigation Districts, held in Fourmile and Fish Lake reservoirs, are about 80 percent of the average storage, but 135 percent of last years' figure on this date. Total water now stored is about 10,000 acre feet compared with 7,400 a.f. a year ago.

Talent Irrigation District water supplies, held in Emigrant, Hyatt and Howard Prairie reservoirs, now total about 74,000 acre feet compared with 43,000 a.f. one year ago on January 1.

STREAMFLOW

Flow of Rogue River at Raygold** has averaged 145 percent of the 1943-57 average since October 1. Likewise, flow of the Umpqua has been well above average. In spite of all this flooding and above average streamflow, it is interesting to note that flow of these southwestern Oregon streams dropped off to about one-half normal in the last week of the old year.

* From River Forecast Center, U. S. Weather Bureau, Portland, Oregon

** Preliminary data from U. S. Geological Survey, Portland, Oregon and Pacific Power and Light Company, Medford, Oregon

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Althouse Creek		
Applegate River, Big		
Applegate River, Little		
Ashland Creek		
Butte Creek, Little		
Butte Creek, Big		
Cow Creek		
Deer Creek		
Elk Creek		
Emigrant Creek (above Res.)		
Evans Creek		
Gold Hill Irrigation Dist.		
Grants Pass Irrig. Dist.		
Grave Creek		
Illinois River, East Fork		
Illinois River, West Fork		
Jump-off-Joe Creek		
Neil Creek		
Red Blanket Creek		
Rogue River		
Sucker Creek		
Table Rock Irrig. Dist.		
Thompson Creek		
Wagner Creek		
Williams Creek		

Forecasts begin in
the February 1
report which will
reach you about
February 9, 1963.

RESERVOIR STORAGE (1,000 Ac. Ft.) January 1, 1963

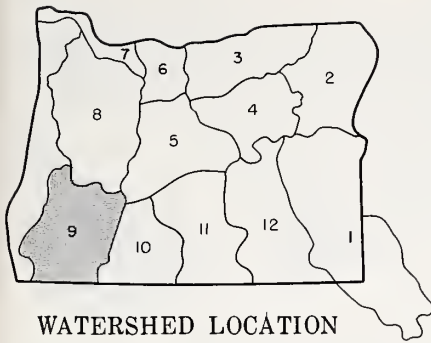
RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Emigrant Gap	39.0	20.1	16.6	3.8
Fish Lake	7.8	4.5	4.0	4.6
Fourmile Lake	16.1	5.5*	3.4	7.7
Howard Prairie	60.0	41.6	20.0	- -
Hyatt Prairie	16.1	12.3	6.6	5.4
*Est.				

STREAMFLOW FORECASTS^a (1,000 Ac. Ft.) as of January 1, 1963

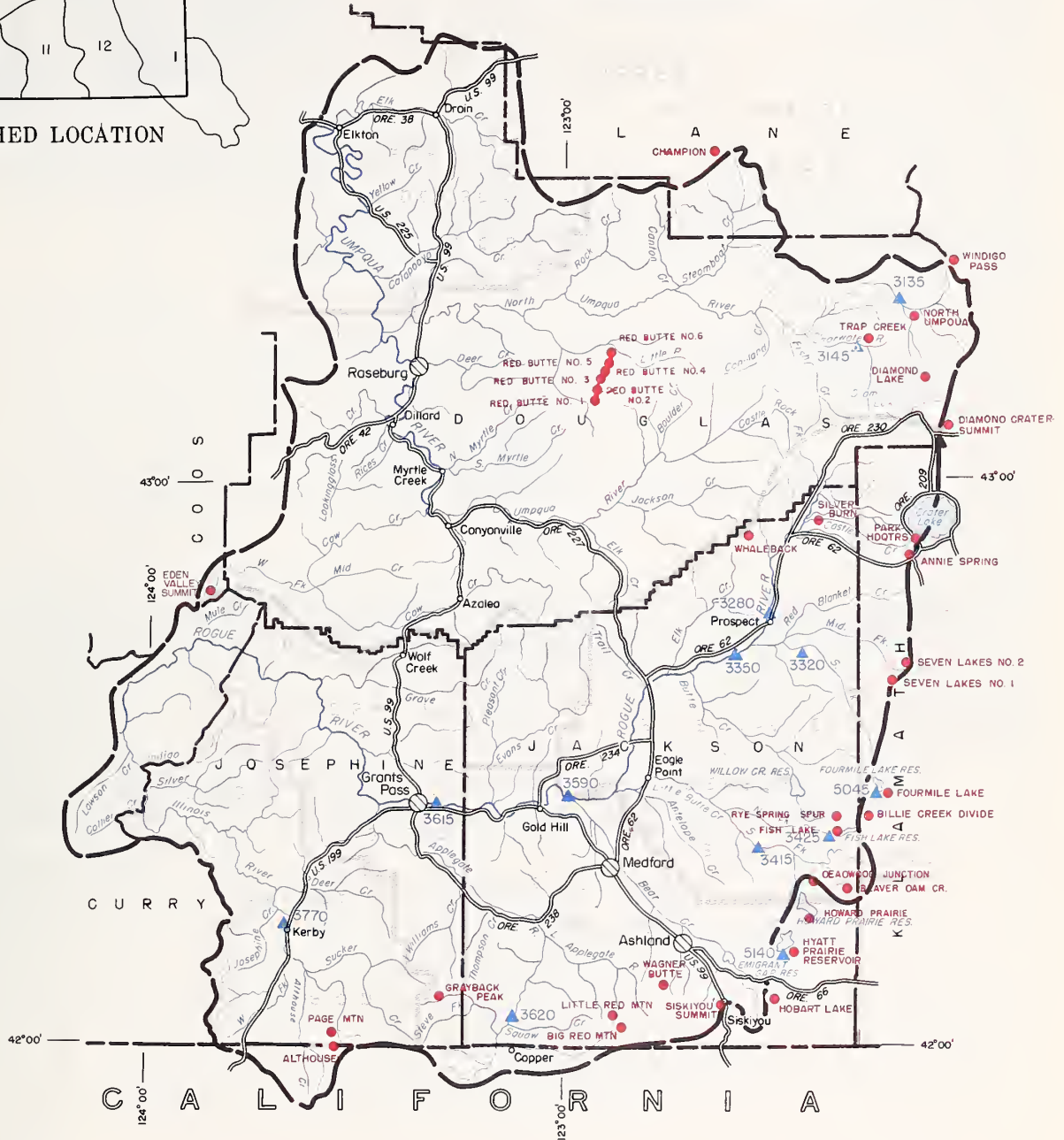
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^e
NO.	NAME				
3620	Applegate near Copper	c	April-Sept.	131	
3145	Clearwater above Trap Creek ^d	c	April-Sept.	73	
5045	Fourmile Lake net Inflow ^d	c	March-Sept.	8.0	
5140	Hyatt Reservoir net Inflow ^d	c	April-Sept.	6.2	
3770	Illinois River at Kerby ^d	c	March-July	314	
		c	April-Sept.	196	
3425	Little Butte, N. Fk. at Fish Lake nr. Lake Cr. ^d	c	April-Sept.	16.9	
3415	Little Butte, S. Fk. near Lake Creek	c	April-July	42	
3280	Rogue above Prospect	c	April-Sept.	351	
		c	April-July	293	
3320	Rogue, South Fork near Prospect ^d	c	April-Sept.	83	
		c	April-July	71	
3350	Rogue below South Fork	c	April-Sept.	749	
		c	April-July	608	
3590	Rogue at Raygold near Central Point	c	April-Sept.	1004	
		c	April-July	842	
3615	Rogue at Grants Pass	c	April-Sept.	974	
3135	Umpqua, North below Lemolo Res. nr. Toketee Falls ^d	c	April-Sept.	186	

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not Surveyed. (h) Construction. (i) 7 of 18 sampling points. (j) Partly estimated. (*) 1943-57 Adjusted average.

ROGUE, UMPQUA WATERSHEDS



10 0 10 20 30
SCALE IN MILES



LEGEND

- Watershed Boundary
- - - Sub-watershed Boundary
- - - Soil Conservation District Bdry
- - - County Boundary
- ▲ Forecast Point
- Snow Course

Rogue, Umpqua Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Althouse	4530	c				
Annie Spring	6018	12/28	21	7.1	21.7	19.7*
Beaver Dam Creek	5100	g				
Big Red Mountain	6500	c				
Billie Creek Divide	5300	12/28	8	2.6	12.0	11.4*
Champion	4500	1/2	0	0.0	12.4	10.5*
Cold Springs Camp	6100	c				
Deadwood Junction	4600	g				
Diamond-Crater Summit	5800	12/27	20	7.3	24.2	- -
Diamond Lake	5315	12/27	9	3.2	15.2	10.8*
Eden Valley Summit	2390	1/1	0	0.0	- -	- -
Fish Lake	4865	1/3	0	0.0	- -	- -
Fourmile Lake	6000	g				
Grayback Peak	6000	c				
Hobart Lake	5010	g				
Howard Prairie	4500	12/31	0	0.0	4.4	- -
Hyatt Prairie Reservoir	4900	12/31	0	0.0	3.5	4.2*
Little Red Mountain	6500	c				
North Umpqua near Lake Creek	4215	12/26	8	2.9	7.8	- -
Page Mountain	4045	c				
Park Headquarters	6450	12/28	37	15.0	31.6	24.2*
Red Butte #1	4560	12/27	0	0.0	8.2	- -
Red Butte #2	4000	12/27	0	0.0	0.3	- -
Red Butte #3	3500	12/27	0	0.0	T	- -
Red Butte #4	3000	12/27	0	0.0	0.0	- -
Red Butte #5	2500	12/27	0	0.0	0.0	- -
Red Butte #6	2000	12/27	0	0.0	0.0	- -
Rye Spring Spur	5000	g				
Seven Lakes #1	6800	c				
Seven Lakes #2	6200	c				
Silver Burn	3720	12/27	0	0.0	5.2	5.1
Siskiyou Summit	4630	12/28	0	0.0	3.2	3.4
South Fork Canal	3500	12/27	0	0.0	0.8	1.5*
Trap Creek	3800	12/26	T	T	6.7	- -
Wagner Butte	6900	c				
Whaleback	5140	c				
Windigo Pass	5800	c				

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK KLAMATH WATERSHEDS OREGON

as of
JANUARY 1, 1963



U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for 1963 irrigation water supplies in Klamath County is relatively good for lands served from Upper Klamath Lake and Clear Lake but only fair for acres watered from Gerber reservoir. Mountain snow pack is extremely poor for this date with no snow to be found below 5,000 feet elevation.

Moisture in the upper watershed soils is very good and will favor runoff from melting snow in the spring.

SNOW COVER

Water content of the mountain snow cover is 33 percent of the January average and is only one-fourth of that measured a year ago. Temperatures need to be more nearly normal to permit future storms to deposit snow rather than rain on the watersheds.

SOIL MOISTURE

Heavy fall rains have recharged the upper watershed soils to about 80 percent of the total capacity. A year ago these soils were extremely dry under the snow pack and soaked up much of the runoff that melting snow should have provided.

RESERVOIR STORAGE

Storage in Upper Klamath Lake is 364,500 acre feet compared with 269,700 a.f. a year ago on January 1. This is an excellent start for the 1963 season.

On the other hand, storage in Gerber and Clear Lake is 20 and 40 percent below the 15 year average (1943-57). Clear Lake holds 111,500 a.f. compared with 54,100 a.f. a year ago and Gerber holds 27,200 a.f. against only 1,600 last year. These two reservoirs are completely dependent on rain and snowfall and greatly need large amounts of runoff to provide adequate water supplies next summer.

STREAMFLOW

Inflow to Upper Klamath Lake* has averaged 131 percent of the 15 year average since October 1 and flow into Gerber and Clear Lake has also been above normal.

A normal snow pack on Klamath watersheds this year should produce excellent water supplies because the watershed soils are well recharged.

* Preliminary data from Pacific Power and Light Co., Medford, Oregon

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Ft. Klamath Valley Lost River (Clear Lake) Lost River (Gerber) Lost River (Willow Res.) Sprague River Upper Klamath Lake Williamson River	Forecasts begin in the February 1 report which will reach you about February 9, 1963.	

RESERVOIR STORAGE (1,000 Ac. Ft.) January 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	440.2	111.5	54.1	195.3
Gerber	94.0	27.2	1.6	33.8
Upper Klamath Lake	584.0	364.5	269.7	313.2

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of January 1, 1963

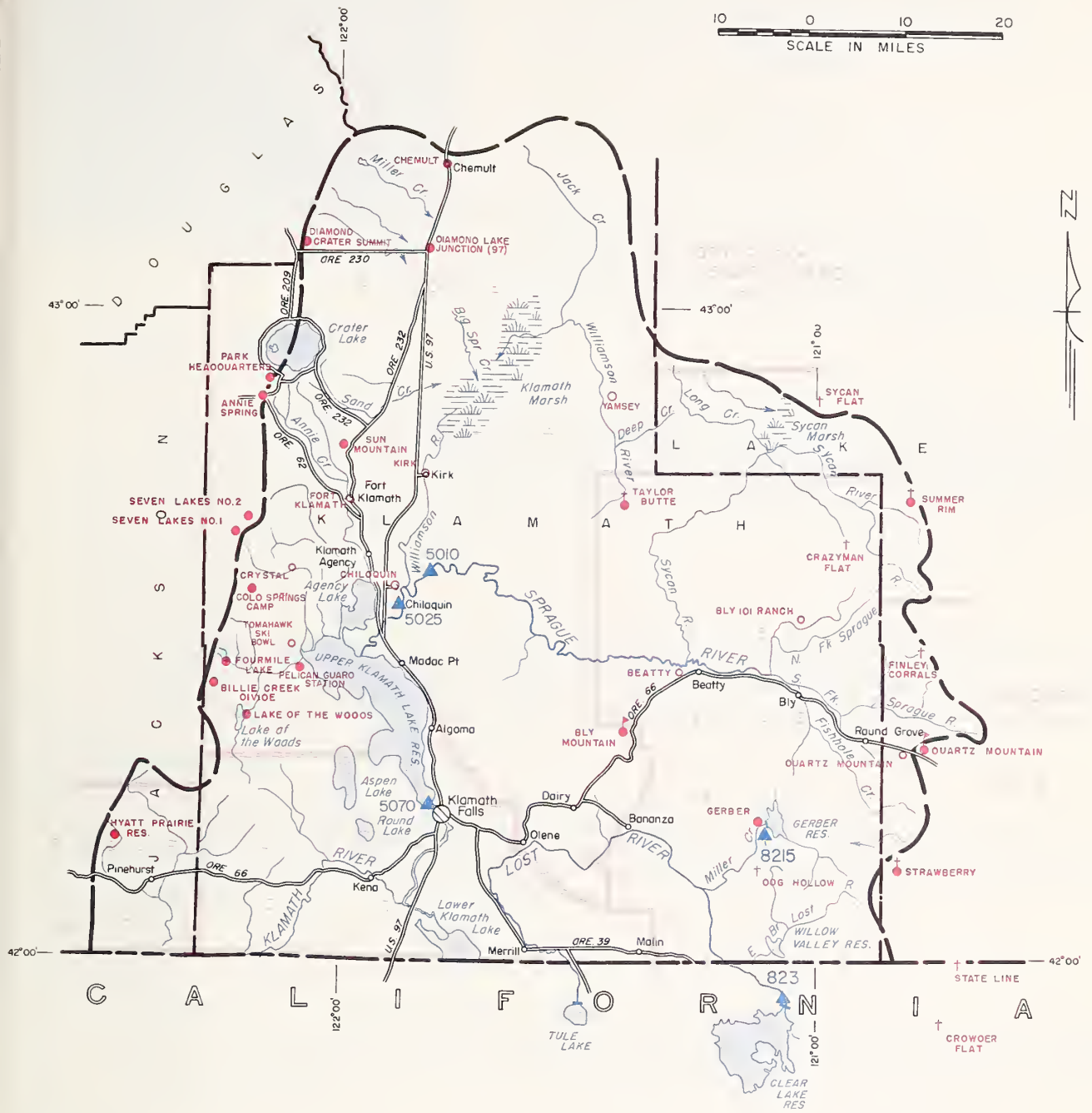
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
923	Clear Lake Reservoir Inflow ^g	c	Feb.-June	106	
		c	April-Sept.	50	
8215	Gerber Reservoir Inflow ^g	c	Feb.-June	51	
		c	April-Sept.	25	
5010	Sprague near Chiloquin	c	Feb.-Sept.	390	
		c	April-Sept.	296	
5070	Upper Klamath Lake net Inflow ^g	c	Feb.-Sept.	960	
		c	April-Sept.	632	
5025	Williamson below Sprague River ^d	c	April-Sept.	486	
		c	Feb.-Sept.	657	

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Annie Spring	6018	12/28	21	7.1	21.7	19.7*
Beatty (PP&L)	4300	f				
Billie Creek Divide	5300	12/28	8	2.6	12.0	11.4*
Bly Mountain	5090	12/26	0	0.0	5.2	- -
Bly 101 Ranch (PP&L)	4800	f				
Chemult	4760	12/27	4	1.1	5.8	5.5*
Chiloquin (PP&L)	4187	f				
Cold Springs Camp	6100	c				
Crazyman Flat ^e	6100	c				
Crowder Flat ^e	5200	c				
Crystal (PP&L)	4200	f				
Diamond-Crater Summit	5800	12/27	20	7.3	24.2	- -
Diamond Lake Junction (97)	4600	12/27	0	0.0	2.7	- -
Dog Hollow ^e	4900	c				
Finley Corrals ^e	6000	c				
Fort Klamath (PP&L)	4150	f				
Gerber	4850	12/31	0	0.0	2.0	5.6
Hyatt Prairie Reservoir	4900	12/31	0	0.0	3.5	4.2*
Kirk (PP&L)	4533	f				
Lake of the Woods	4960	f				
Park Headquarters	6450	12/28	37	15.0	31.6	24.2*
Pelican Guard Station	4150	12/28	0	0.0	2.4	- -
Quartz Mountain	5320	12/26	0	0.0	4.0	3.4*
Quartz Mountain (PP&L)	5504	12/26	T	T	4.6	3.7**
Seven Lakes #1	6800	c				
Seven Lakes #2	6200	c				
State Line ^e	5750	c				
Strawberry	5600	c				
Summer Rim	7200	c				
Sun Mountain	5350	12/21	11	3.5	12.0	12.0
Sycan Flat ^e	5500	c				
Taylor Butte	5100	12/26	0	0.0	4.1	- -
Tomahawk Ski Bowl (PP&L)	4200	f				
Yamsey (PP&L)	4600	f				

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) From COPCO or USBR records of inflow. (h) Flashboards increase capacity to 513.0 (i) Water content partly estimated. (j) Nearest current data. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in the base period.

KLAMATH WATERSHEDS



WATER SUPPLY OUTLOOK LAKE COUNTY, GOOSE LAKE WATERSHEDS OREGON

as of
JANUARY 1, 1963



U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for 1963 irrigation water supplies in Lake County at this early winter date is fair although seriously dimmed by one of the poorest snow packs ever measured on January 1. Stored water supplies, although way ahead of those on hand a year ago, are still well below average, but soil moisture in the upper watersheds is well recharged from heavy fall rains.

SNOW COVER

At the beginning of the year, there is no snow at all below 5,500 feet elevation. On the higher elevations, there is widely scattered snow and very little of it. Fortunately there are two, possibly three, remaining months during which snow can accumulate.

SOIL MOISTURE

Very heavy fall rains have recharged the upper watershed soils to about 85 percent of the total capacity. This is very favorable when compared to the very dry condition a year ago.

RESERVOIR STORAGE

Drews reservoir contains 23,300 acre feet compared with only 795 a.f. just a year ago. Even so, this greatly improved storage is only 67 percent of the 15 year average (1943-57). Cottonwood has about 1,000 acre feet now which is an excellent start. Last year it had only 100 a.f.

STREAMFLOW

Lake County streams have had very high flows since October 1. Some of these flows reached stages equal to the maximum flows during snow melt runoff last spring. However all streams in this area are highly dependent upon a good snow pack for satisfactory runoff during the irrigation season. Temperatures nearer normal will be needed during the remainder of the winter to permit snow rather than rain to fall on the watersheds.

Report prepared by
W. T. FROST AND BOB L. WHALEY
U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair", "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Chewaucan River Crooked Creek Deep Creek Dry Creek East Side Goose Lake Guano Lake Honey Creek Lakeview Water Users Assn. Rock Creek (Hart Mtn.) Silver-Buck Creeks Summer Lake Thomas Creek Twentymile Creek Warner Lakes	Forecasts begin in the February 1 report which will reach you about February 9, 1963.	

RESERVOIR STORAGE (1,000 Ac. Ft.) January 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottonwood	4.1	1.0	0.1	0.2
Drew	63.0	23.3	0.8	34.8

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of January 1, 1963

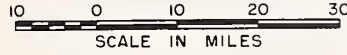
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
3840	Chewaucan near Paisley	c	March-June	92	
		c	April-June	82	
3715	Deep above Adel	c	March-June	83	
		c	April-June	71	
3385	Drew Reservoir net Inflow	c	March-July	47	
		c	April-July	34	
3785	Honey near Plush	c	March-June	19.2	
		c	April-June	16.3	
3660	Twentymile near Adel	c	March-June	28	
		c	April-June	20	

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Bald Mountain (Nev.)	6720	c				
Bear Flat Meadow ^e	5900	c				
Camas Creek	5720	12/27	0	0.0	7.0	- -
Cox Flat ^e	5750	c				
Crane Mountain ^e	6020	c				
Crowder Flat ^e (Calif.)	5200	c				
Dismal Swamp ^e (Calif.)	7000	c				
Finley Corrals ^e	6000	c				
Hart Mountain ^e	6350	c				
Little Bally Mtn. ^e (Nev.)	6600	c				
Mill Creek	6200	c				
Patton Meadows ^e	6800	c				
Quartz Mountain (PP&L)	5504	12/26	T	T	4.6	3.7**
Quartz Mountain	5320	12/26	0	0.0	4.0	3.4*
Sherman Valley ^e	6600	c				
Silver Creek	4900	12/27	0	0.0	2.9	- -
State Line ^e (Calif.)	5750	c				
Strawberry	5600	c				
Summer Rim	7200	c				
Sycan Flat ^e	5500	c				

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period. (g) Nearest current data.

LAKE COUNTY, GOOSE LAKE WATERSHEDS



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- Snow Course
- † Aerial Snow Depth Gage
- COPCO Snow Station
- † Soil Moisture Station



WATER SUPPLY OUTLOOK HARNEY BASIN WATERSHEDS OREGON

as of
JANUARY 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for 1963 irrigation water supplies in Harney Basin, at this early winter date is fair, but is seriously dimmed by the shortage of snow pack in the upper watersheds. Soil moisture conditions are highly favorable and there are still two or possibly three months in which snow cover can accumulate.

SNOW COVER

There is no snow below 5,000 feet elevation at the beginning of the year. Upper elevations now have a light snow cover about 15 percent of average and only one-tenth the amount at this date last year.

SOIL MOISTURE

Above normal fall rains have satisfactorily recharged the soil profile in upper watersheds so that it is now 86 percent of total capacity. A year ago on this date, the soils were much drier and only 69 percent of total capacity.

STREAMFLOW

Streams in Harney Basin have been flowing much above average for the past two months as a result of heavy precipitation and the absence of freezing temperatures during most of the period.

Adequate spring and summer water supplies in Harney Basin are highly dependent on the accumulation of a good snow pack which in turn depends on normal temperatures during winter storms.

Report prepared by
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209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Catlow Valley Cow Creek Donner und Blitzen River Mill-Coffeepot Creeks Rattlesnake Creek Silver Creek Silvies River Soldier-Prather Creek Trout Creek Whitehorse Creek	Forecasts begin in the February 1 report which will reach you about February 9, 1963.	

RESERVOIR STORAGE (1,000 Ac. Ft.) January 1, 1963

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.) as of January 1, 1963

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
3960	Donner und Blitzen near Frenchglen	c	March-June	63	
		c	April-Sept.	67	
4030	Silver near Riley	c	April-July	26	
3935	Silvies near Burns	c	March-June	124	
		c	April-Sept.	107	
4065	Trout near Denio	c	March-July	9.5	
		c	April-Sept.	9.2	

SOIL MOISTURE

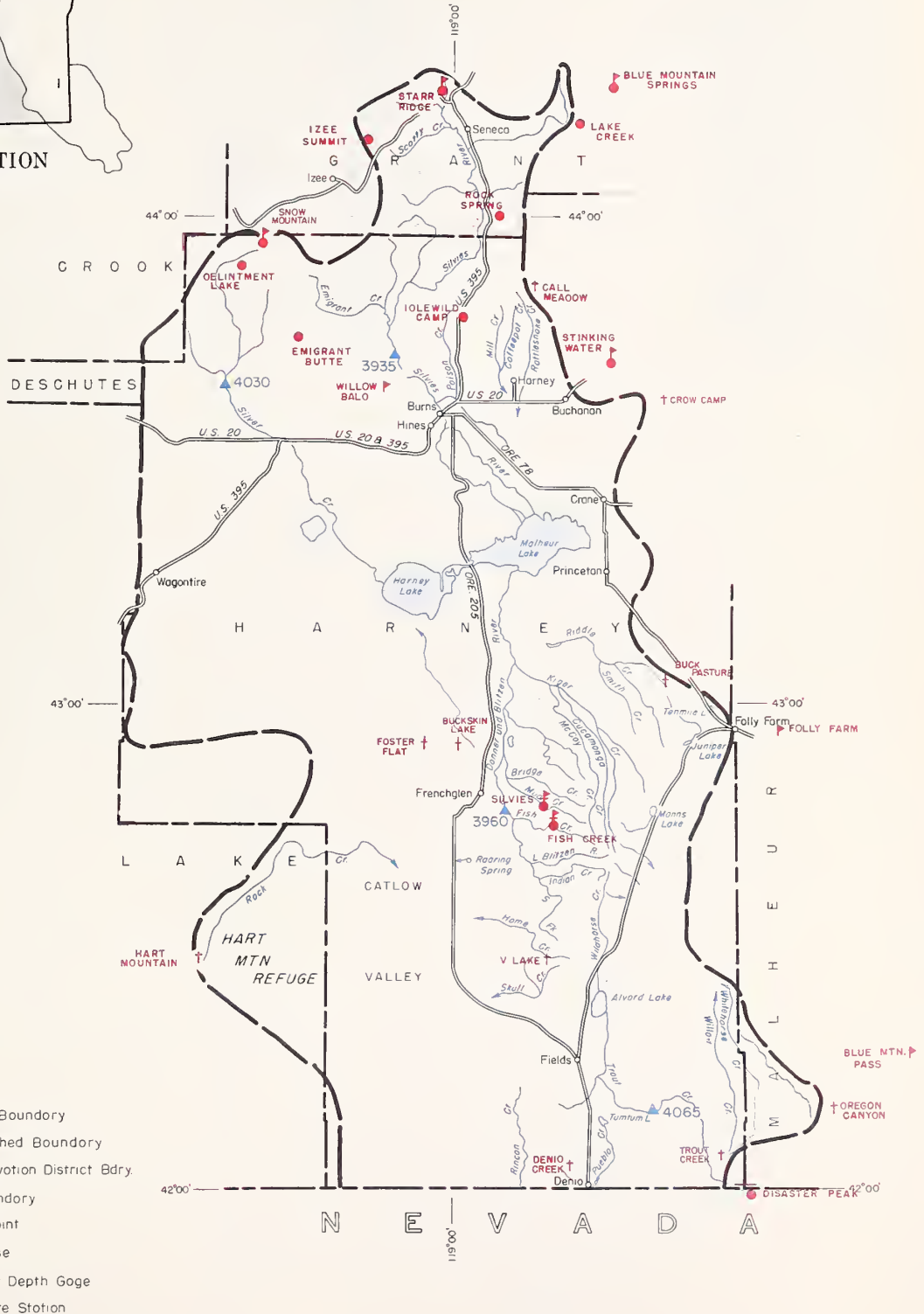
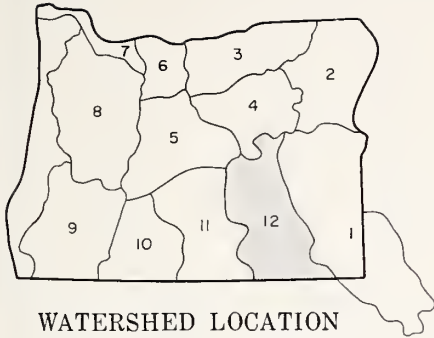
STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Blue Mountain Springs	5900	42	16.9	12-27-62	12.3	7.6	--
Fish Creek	7600	48	15.0	10-22-62	9.2	--	--
Folly Farm	4450	36	12.5	12-19-62	9.0	--	--
Silvies	6900	48	16.4	10-22-62	11.7	--	--
Snow Mountain	6300	48	16.7	c			
Starr Ridge	5150	36	10.6	12-27-62	10.3	6.8	7.9
Stinking Water	4800	48	21.9	12-19-62	20.9	20.7	21.2
Willow-Bald	5000	24	6.6	12-19-62	6.5	3.4	3.8

NOTE: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Partly estimated. (i) No Fall measurement. (j) Nearest current data. (k) 2 miles south of regular course. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

HARNEY BASIN WATERSHEDS

10 0 10 20 30
SCALE IN MILES



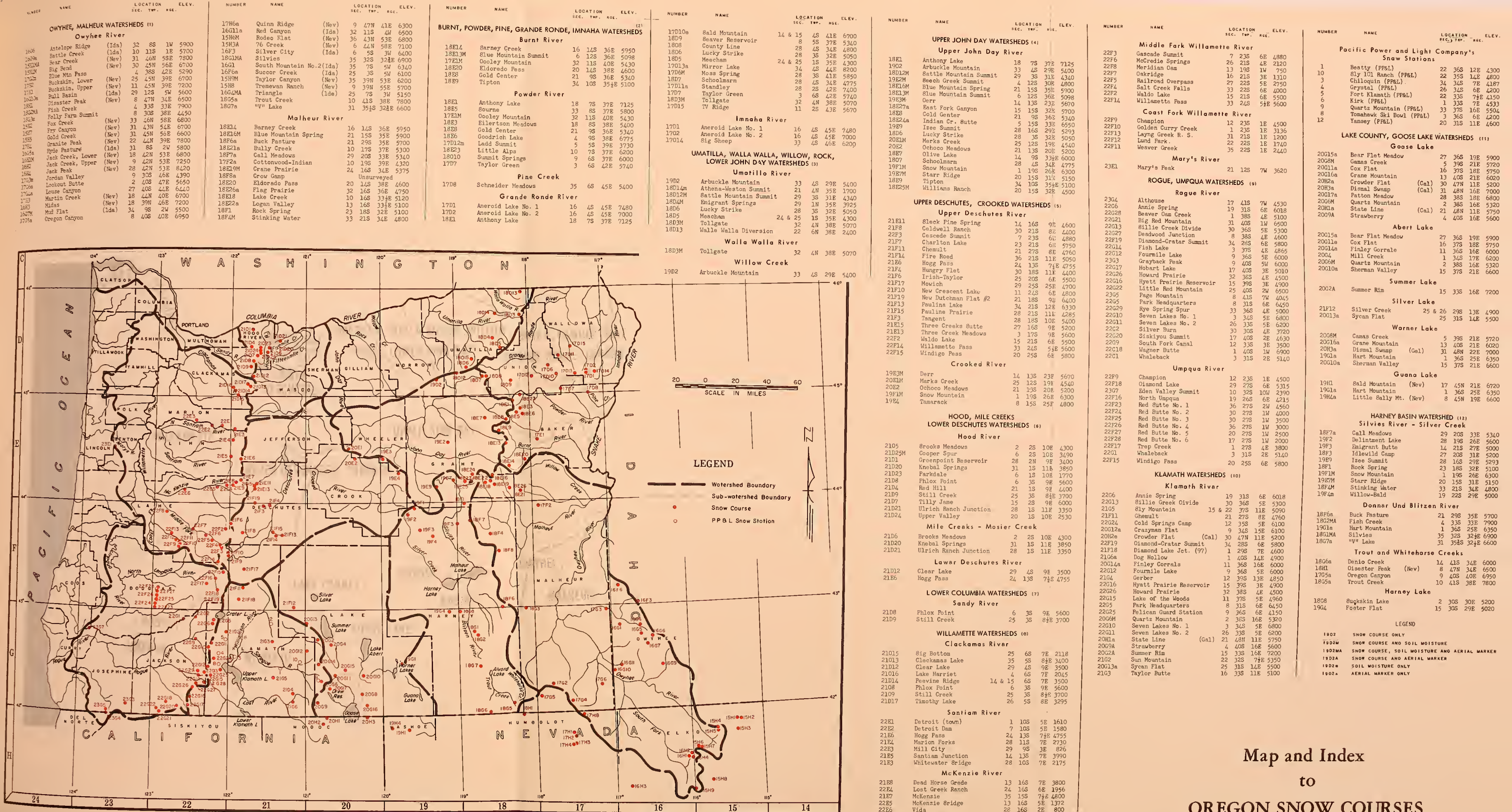
LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- Forecast Point
- Snow Course
- Aerial Snow Depth Gage
- Soil Moisture Station

Harney Basin Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Blue Mountain Spring	5900	12/27	8	3.1	10.5	6.9*
Buck Pasture ^e	5700	c				
Buckskin Lake ^e	5200	c				
Call Meadows ^e	5340	c				
Crow Camp ^e	5500	c				
Delintment Lake	5600	c				
Denio Creek ^e	6000	c				
Disaster Peak (Nev.)	6500	c				
Emigrant Butte	5000	c				
Fish Creek ^e	7900	c				
Foster Flat ^e	5020	c				
Hart Mountain ^e	6350	c				
Idlewild Camp	5200	12/28	0	0.0	3.5	2.6*
Izee Summit	5293	12/27	0	0.0	5.5	4.6*
Lake Creek	5120	12/27	1	0.1	6.0 ^k	- -
Oregon Canyon ^e	6950	c				
Rock Spring	5100	12/28	1	0.2	2.3	2.7*
Silvies ^e	6900	c				
Snow Mountain	6300	c				
Starr Ridge	5150	12/27	0	0.0	4.5	2.8*
Stinking Water	4800	12/27	T	T	- -	2.1*
Trout Creek ^e	7800	c				
"V" Lake ^e	6600	c				



Map and Index
to
OREGON SNOW COURSES

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E

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE

- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon State University
- Oregon State Engineer and Corps of State Watermasters
- Oregon State Highway Engineers
- Soil Conservation Districts of Oregon

COUNTY

- Douglas County Water Resources Survey

FEDERAL

- Department of Agriculture
 - Cooperative Extension Service
 - Forest Service
 - Soil Conservation Service
- Department of Commerce
 - Weather Bureau
- Department of the Interior
 - Bonneville Power Administration
 - Bureau of Land Management
 - Bureau of Reclamation
 - Fish and Wildlife Service
 - Geological Survey
 - National Park Service
- Department of National Defense
 - Corps of Army Engineers

PUBLIC UTILITIES

- Pacific Power and Light Company
- Portland General Electric Company
- California-Pacific Utilities Company

MUNICIPALITIES

- City of Baker
- City of La Grande
- City of The Dalles
- City of Walla Walla

IRRIGATION DISTRICTS

- Arnold Irrigation District
- Associated Ditch Companies
- Burnt River Irrigation District
- Central Oregon Irrigation District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Jordan Valley Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Squaw Creek Irrigation District
- Talent Irrigation District
- Tumalo Project
- Vale-Oregon Irrigation District
- Warm Springs Irrigation District

PRIVATE ORGANIZATIONS

- Amalgamated Sugar Company
- The Crag Rats, Hood River, Oregon

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with the Snow Survey"*